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APPLICATION OF REMOTE SENSING TECHNOLOGY TO LAND EVALUATION, PLANNING UTILIZATION OF LAND RESOURCES, AND ASSESSMENT OF WETLAND HABITAT IN EASTERN SOUTH DAKOTA

PARTS I AND II

For

National Aeronautics and Space Administration
Office of University Affairs
Washington, D C.
July 1, 1975 - June 30, 1976

(E77-10104) APPLICATION OF REMOTE SENSING TECHNOLOGY TO LAND EVALUATION, PLANNING UTILIZATION OF LAND RESOURCES, AND ASSESSMENT OF WESTLAND HABITAT IN EASTERN SOUTH DAKOTA, PARTS 1 AND 2 (South Dakota G3/43
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Remote Sensing Institute
South Dakota State University
Brookings, South Dakota 57006

SDSU RSI-76-07

APPLICATION OF REMOTE SENSING TECHNOLOGY TO LAND EVALUATION, PLANNING UTILIZATION OF LAND RESOURCES, AND ASSESSMENT OF WILDLIFE AREAS IN EASTERN SOUTH DAKOTA

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For

National Aeronautics and Space Administration
Office of University Affairs
Washington, D.C.
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Grant No. NGL42-003-007

APPLICATION OF REMOTE SENSING TECHNOLOGY TO LAND EVALUATION AND PLANNING UTILIZATION OF LAND RESOURCES

PART I

ABSTRACT

Remote sensing technology has previously been evaluated and used to map general soils for tax equalization in western South Dakota but not for the more diverse, glaciated terrain of Eastern South Dakota. The purpose of the present study was to evaluate the use of remote sensing technology for mapping soils for similar purposes in Eastern South Dakota. LANDSAT fulfilled the requirements for general soils and land use information. RB-57 imagery (supplemented by large scale black and white stereo coverage) was required to provide the information and detail needed for mapping soils for land evaluation. Soils map for land evaluation was provided on clear mylar at the scale of the county highway map to aid users in locating mapping units. Resulting mapped data were computer-processed to provide a series of interpretive maps (land value, limitations to development, etc.) and area summaries for the users.

Recent applications of the rooftop survey program and other technology developed under NASA funding are summarized.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES (con't)

LIST OF TABLES

ACKNOWLEDGEMENTS

The Potter County Project was supported in part by the State of South Dakota and the National Aeronautics and Space Administration (NASA) Grant No. NGL 42-003-007. Appreciation is extended to the NASA technical officer (Mr. Joe Vitale) for support and direction of the project.

Appreciation is also extended to Mr. Robert Borszich (Director of Equalization, Potter County) for his continued interest and support in the land evaluation study, and to Mr. Don Miller of the South Dakota Department of Revenue who supplied verified sales values for Potter County.

APPLICATION OF REMOTE SENSING TECHNOLOGY TO LAND EVALUATION, PLANNING UTILIZATION OF LAND RESOURCES, AND ASSESSMENT OF WILDLIFE AREAS IN EASTERN SOUTH DAKOTA

The major objective of the NASA project is to provide remote sensing technology for two programs, each with important applications involving decisions by public agencies. The programs are: (1) application of remote sensing technology to land evaluation and planning utilization of land resources in Eastern South Dakota, and (2) assessment of wildlife habitat in relation to the proposed Oahe Irrigation Project. Due to the differing nature of these two studies, they will be discussed as Parts I and II of the annual report. Part I deals with land evaluation and planning.

INTRODUCTION

The 1971 South Dakota Legislature enacted a law requiring agricultural lands to be taxed according to their ability to produce agricultural crops or native grasses. Crop and range yields are available for the soils of South Dakota, and Westin et al., (1974) developed procedures for relating soils, yield, and land values. However, less than half of the sixty-seven counties of the state have the soils information necessary for the evaluation. Just over one-half of the counties east of the Missouri River lack the soils information for compliance with the law, and Potter County is one of these.

It has been demonstrated in Pennington County that remote sensing can provide the basic soils from LANDSAT for land evaluation in western South Dakota. However, similar procedures have not been developed for preparing soils maps and relating the data to land values in the Eastern South Dakota area. The Pennington County study in western South Dakota generated statewide interest which led to requests for similar studies in the more diverse and intensely farmed eastern area of South Dakota. Eastern South Dakota has been recently glaciated in contrast to Western South Dakota which has not been glaciated. The glaciated terrain contains a much greater diversity in soils and land-use than unglaciated western counties; therefore, a different approach using

high altitude imagery was investigated for the mapping effort. Several individuals expressed a desire for the study underway in Potter County as documented in the Semi-Annual Progress Report (July 1 - December 31, 1975).

The large increase in land value in the past few years and the implementation of the 1971 law mentioned previously provide a basis for the soil mapping project in Potter County. In addition, the counties of South Dakota are required to have comprehensive land use plans developed by July 1, 1976. The general land use and soils maps for Potter county prepared from LANDSAT provided data required for this effort. A demonstrated use of remote sensing techniques for development of land use and soils data for similar planning has been completed in Meade County.

PROCEDURES

LANDSAT, RB-57 imagery, and large scale USGS photography (property of Potter County) were evaluated for making soils and land use inventories in the diverse, glaciated terrain of Potter County. The technology developed in the previous NASA sponsored research efforts was utilized where applicable in eastern South Dakota. The procedures used and work implemented in Potter County during the year are as follows:

1. Preliminary meetings were held with the county commission and the director of equalization to explain the use of remote sensing for mapping soils for land evaluation.
2. LANDSAT imagery at 1:125,000 was visually interpreted to provide a general land use map and a general soils map for Potter County for use in their comprehensive planning effort Interpretations were ground checked on RB-57 photography taken in June 1975
3. Existing techniques and available imagery were evaluated for mapping soils for tax equalization. The detail of LANDSAT was insufficient for providing the soils information necessary for the diverse terrain of Potter County. High altitude color-infrared RB-57 imagery was used primarily. However, low altitude

black and white aircraft photos were used to further distinguish soil areas.

4. The interpreted soil area delineations were field checked for accuracy to ensure the proper soil description for each area.
5. The soil areas were grouped according to productivity based on yield data for each of the soil components comprising the areas.
6. General soils and land use and the soils map for land evaluation for tax equalization were digitized and placed in a data base. Various areal summaries, soil interpretation, land value maps, etc. were prepared from the data and computer drawn at desired scales (e.g., to fit county road maps at about 1:140,000).

The land use and general soils data have been furnished to the planning personnel of Potter County and their regional planning office to aid in the compilation of the county comprehensive plan. The soils map for land evaluation has been given to the Director of Equalization for application to Potter County.

The general soils and land use data and classifications derived for Potter County from LANDSAT were shown in the semi-annual progress report. However, the main objective of the study is to provide soils data for land evaluation and this topic will receive major attention in this report.

Soils Map for Land Evaluation

The Potter County soils map for land evaluation is shown in Figure 1. The description of the mapped categories follows in Table 1. The mapped data were then reduced to fit the county road maps (Figure 2) to make it easier for the user (director of equalization) to locate the soils and land value classes. The soil mapping units were assigned dollar values using a procedure developed by Westin et al. (1974). Values were calculated for each soil and provided to the Director of Equalization along with a guide providing examples of the process. The primary source of information was RB-57 color infrared imagery with some aid in delineation of topographic features from low altitude black and white photography. The general advantages of RB-57 imagery over LANDSAT are the increased

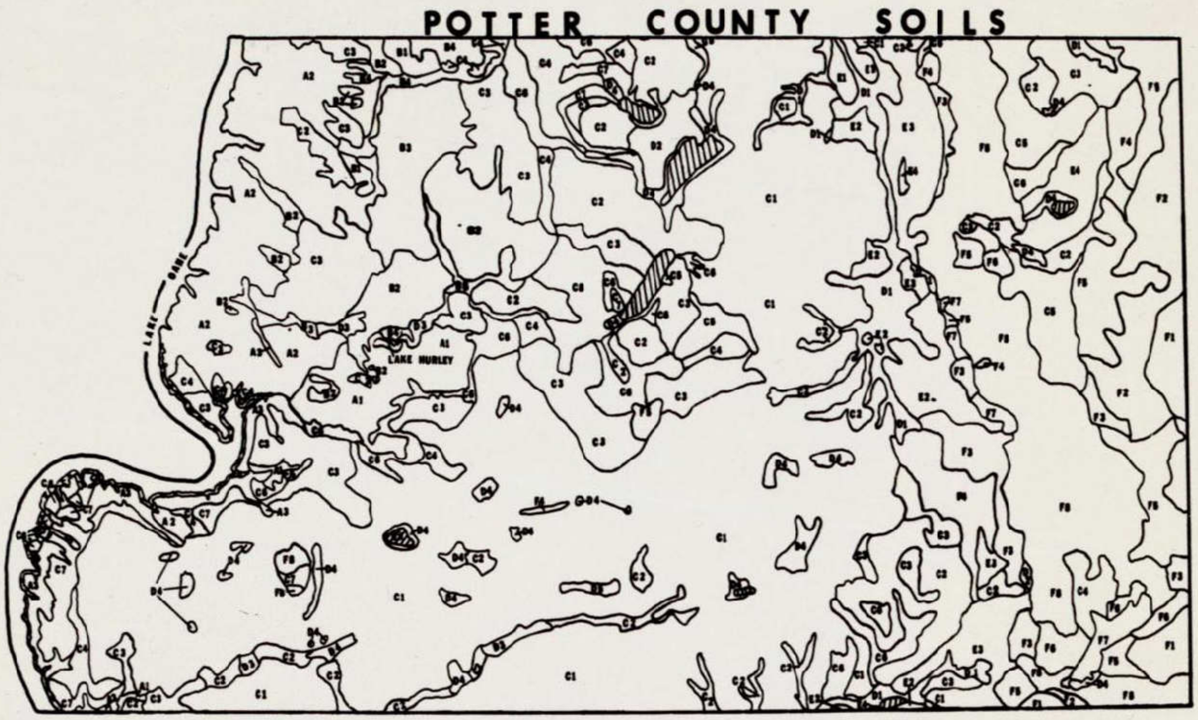


Figure 1. Potter County Soils for land evaluation. Soils data were interpreted from RB-57 color infrared imagery (June 1975) enlarged to a scale of 1:63,360. Soil mapping units are described in Table 1.

Table 1 Potter County Soils for Ag-Land Evaluation

Unit	Description	LCS*
A.	Clayey soils formed over Pierre Shale (Missouri River Breaks)	
A1.	Shallow moderately steep and hilly clayey soils to deep and moderately deep, sloping clayey soils	6e 4e
A2.	Sloping to steep clayey and undulating to moderately steep and hilly, loamy and silty soils	6e 7s 4e
A3.	Sloping to steep clayey soils and steep shale breaks and rough broken land	7s 8s
B.	Clayey soils formed in residuum over clay shale	
B1.	Moderately deep and deep nearly level to gently sloping clayey soils	3s 3e, 6s
B2.	Moderately deep and deep gently sloping to sloping clayey soils	4e 6s, 3e
B3.	Moderately deep sloping soils and shallow undulating to moderately steep and hilly clayey soils	4e 3e 6e, 6s
B4.	Moderately deep sloping soils to shallow moderately steep and hilly clayey soils	6e 4e
C.	Silty soils formed primarily in loess and silty glacial drift on uplands	
C1.	Deep nearly level to gently sloping soils	2c, 2e
C2.	Primarily deep gently sloping with some sloping soils	2e 3e
C3.	Deep gently sloping and sloping soils	2e, 3e
C4.	Primarily deep sloping with some gently sloping soils	3e 2e
C5.	Primarily deep sloping with some gently sloping and strongly sloping soils	3e 2e, 4e
C6.	Primarily deep sloping with some undulating to strongly sloping soils	3e 4e
C7.	Primarily strongly sloping with some gently undulating and sloping soils	4e 3e
C8.	Primarily deep gently undulating and sloping to strongly sloping silty soils with some undulating to moderately steep and hilly loamy and silty soils	3e 4e 6e

Potter County Soils for Ag-Land Evaluation (con't)

Unit	Description	LCS*
D.	Nearly level, deep poorly drained silty soils with claypan soils formed on bottomlands	
D1.	Deep, poorly drained, silty soils and saline and alkali soils	6w 7s
D2.	Deep, poorly drained silty soils	5w
D3.	Somewhat poorly drained, nearly level, mixed alluvial soils; often flooded	6w
D4.	Deep, level to gently sloping somewhat poorly drained to poorly drained soils, generally found in closed depressions	5w 6s
D5.	Deep, level, poorly drained soils found in closed depressions	6s
E.	Well-drained silty and loamy soils underlain by sand and gravel	
E1.	Nearly level, loamy and silty soils	3s
E2.	Nearly level to gently sloping or gently undulating soils	3s 3e
E3.	Gently sloping or gently undulating with some nearly level soils	3e 3s
E4.	Gently sloping or gently undulating soils	3e, 3s
F.	Loamy soils formed in glacial till and silty and loamy soils formed in glacial drift on uplands	
F1.	Nearly level, gently sloping with some undulating soils	2c 2e, 3e
F2.	Primarily gently sloping soils with undulating soils and closed depression	2e 3e, 6s
F3.	Undulating and gently sloping soils and closed depressions	3e 2e, 6s
F4.	Primarily undulating soils with some gently sloping soils and closed depressions	3e 2e, 6s
F5.	Gently undulating and sloping to strongly sloping soils with closed depressions	3e 4e, 6s
F6.	Sloping to strongly sloping with some gently sloping soils and closed depressions	4e 3e, 6s

Potter County Soils for Ag-Land Evaluation (con't)

Unit	Description	LCS*
F7.	Sloping to strongly sloping and numerous closed depressions	4e 6s, 3e
F8.	Undulating to moderately steep and hilly soils and closed depressions	3e 6e, 6s

* LCS is Land Capability Subclass

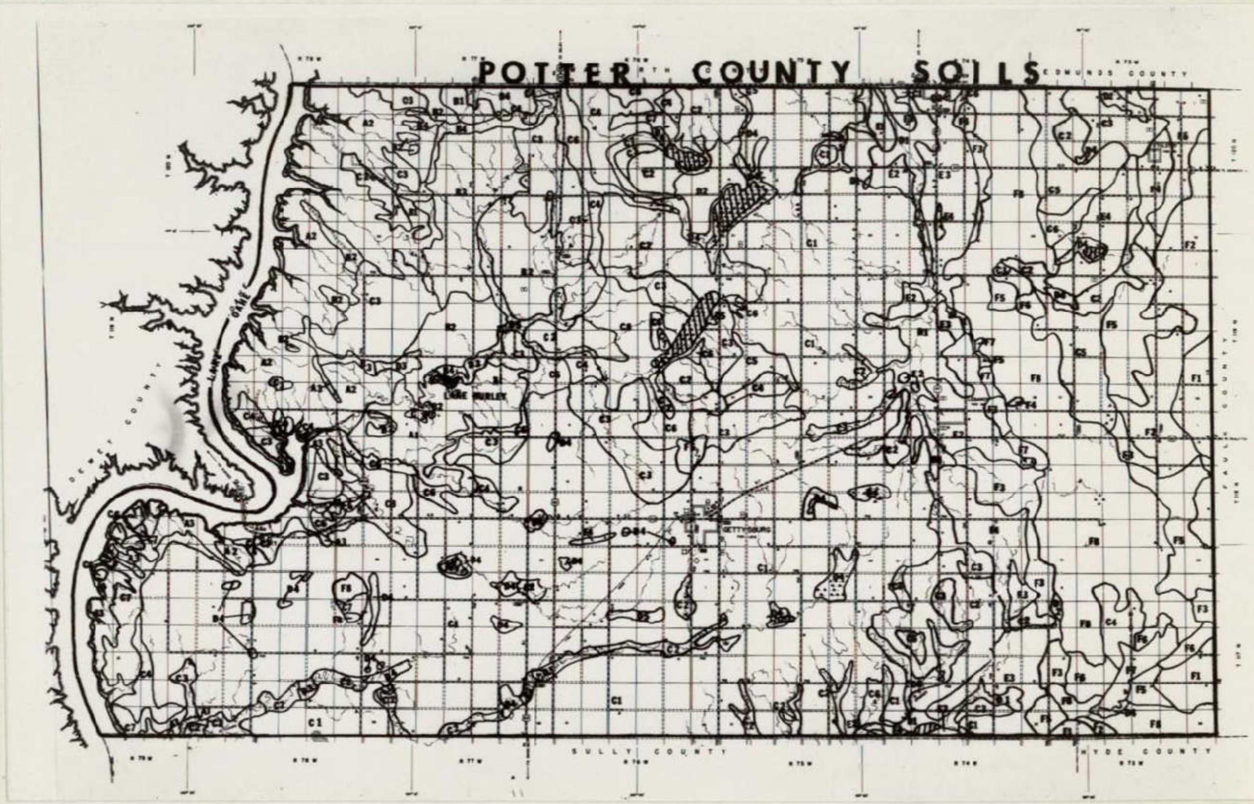
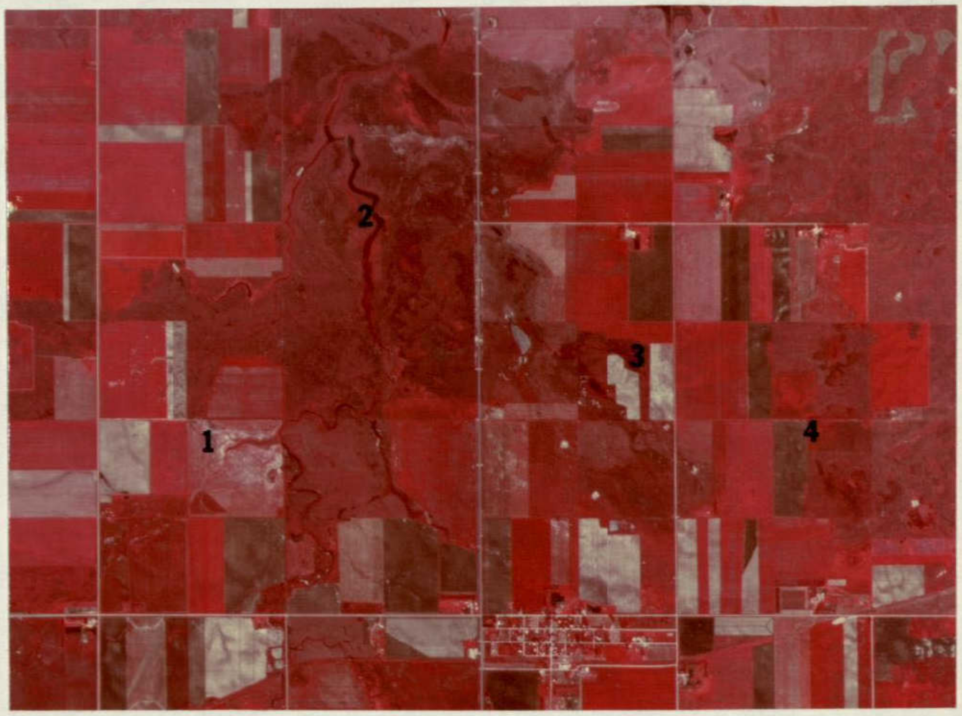


Figure 2. Potter County soils map for land evaluation superimposed on the county road map. Final map was reduced to the scale of the county road map to provide easy location of soils and land value classes by the user (Original county map about 1:140,000).

resolution and the color infrared film which better enhanced differences in vegetative conditions (cover) on the glaciated terrain. Uses and advantages of this RB-57 as compared to low altitude black and white photography are apparent in the following discussion. Three areas in Potter County were selected to demonstrate the advantages of color infrared (RB-57) imagery as compared to black and white panchromatic photography for mapping soils. The first area is located in the east central portion of Potter County (northwest of Lebanon, Figure 3). Four areas were selected on Figure 3 to illustrate the use of color infrared photography in claypan and morainic areas. The first area (1) has a thin white layer of salt on the surface. Note the increase in tonal response of these saline deposits on the color infrared photography. This increases the ability to detect and map these saline areas of very low agricultural value. Area 2 was selected to show that sharper boundary definitions for the drainage courses are apparent on color infrared photography. This aids in analyzing drainage patterns and recognizing soil groups associated with these patterns. Note the light gray washed out appearance for Area 2 on the black and white photography. Areas 3 and 4 were selected to show that color infrared provides better boundary definitions than black and white between cropland and pasture and from the more level areas to the undulating to hilly moraine which occupies a large portion of eastern Potter County. Other tonal variations, such as those among crops, are also more obvious on the color infrared.

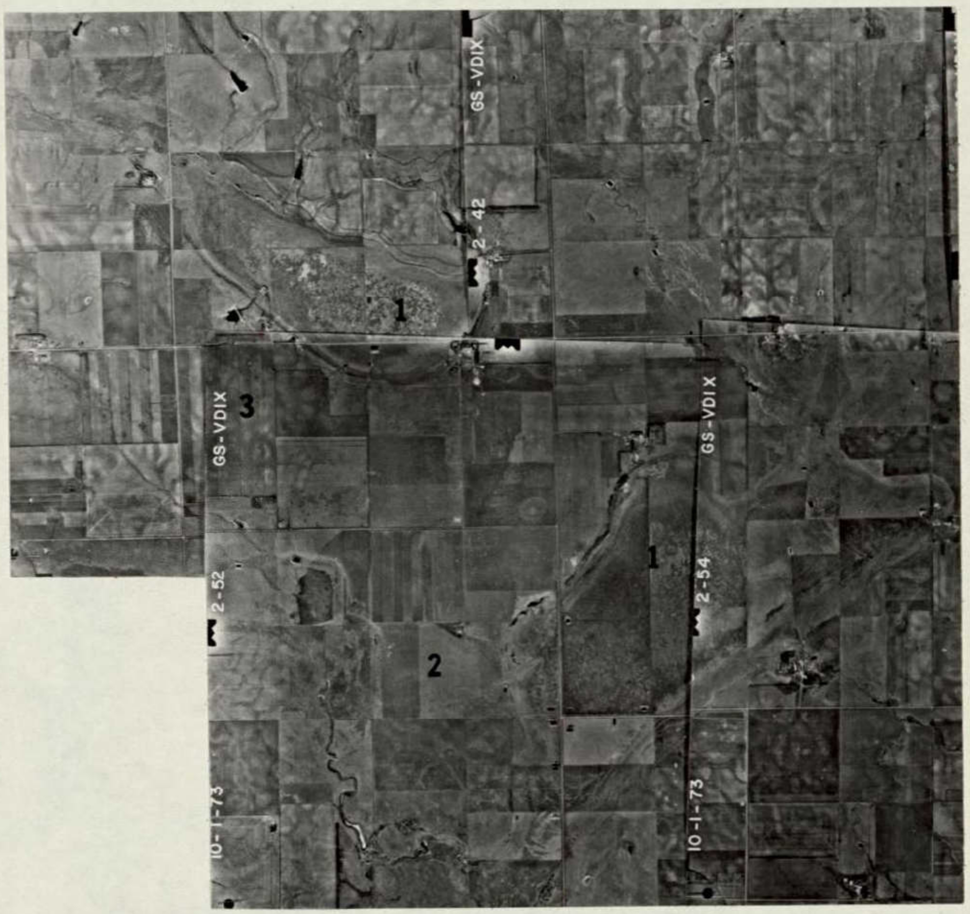
Figure 4 represents a portion of north central Potter County which has several wetland areas. Because wetlands usually consist of clayey soils in seasonally flooded flats, meadows, marshes, and boglike areas it is important that the extent of these wetlands is noted when determining the capability of soils in these areas. Although many of these areas are not in cropland, they are capable of producing good stands of hay.

The advantages of color infrared photography for soil mapping are again apparent in this area. Area 1 was depicted to show the various tonal contrasts between crops and wetland vegetation which make the boundaries of the wetlands apparent. Note the increased number of tonal



B

Figure 3. (Continued) RB-57 color infrared imagery.



A

Figure 4. Use of RB-57 imagery to classify soils and wetland areas in north central Potter County. Note areas 1-3 on photograph A, a black and white photograph (above), and on photograph B, a color infrared photograph (next page). Areas are as follows: 1 = boundaries around clayey depressions; 2,3 = boundaries between cropland and pastures, and different crops respectively.

B

Figure 4. (Continued) RB-57 color infrared imagery.

boundaries (soil gradients) which can be seen on the color infrared photography. Areas 2 and 3 were selected to illustrate the variations between crops and cropland and pasture. The tonal boundaries and repeated gradients were again the most apparent on the color infrared photograph. The marsh vegetation in the upper left wet area (above 1) is also apparent and depicts an area which is continually wet.

Tonal variations on color infrared photography were also helpful in mapping soils in Western Potter County (Figure 5). Area 1 denotes a small park located on the banks of the Missouri River. Note the bright red tones on the color infrared photograph denoting the various tree patterns within the park. The same area on the black and white photograph shows only minor tonal variations.

Areas 2 and 3 show that small clay pans in various fields are easily delineated on color infrared imagery. Note the increased tonal response of the vegetation on the color infrared photograph. Area 4 shows shrubby (treelike) vegetation growing in soil (colluvium) which has collected in drainage ways. The different tones of vegetation are general indicators of the type and capability of various soils. The redder tones indicate high infrared reflectance and are more dense stands of vegetation. Area 5 denotes a loess mantled tableland which is supporting rangeland vegetation. The drainage networks and escarpments in the clay shale breaks adjacent to this area and the cropped portion of the figure are very clear. The tonal boundaries on the color infrared photograph were much sharper than black and white photography. Tonal boundaries which can be used to indicate different soils (deeper, loess, etc.) should not be confused with the tonal variations which can be caused by different management practices (Area 6). Locations of these tonal variations in Area 6 were almost impossible on the black and white photography.

Processing the Mapped Data

All data (general and detailed) acquired by remote sensing technology were digitized to aid in determining the areal extent of each of the categories, provide capabilities to combine the data with other data, and/or to plot (draw) the data at any desired scale. The objective

A

Figure 5. Use of RB-57 imagery to aid in classifying soils adjacent to and in the shale breaks along the Missouri River in Western Potter County. Note areas 1-5 on photograph A, a black and white photograph (above), and on photograph B, a color infrared photograph (next page). Areas are as follows: 1 = trees; 2,3 = poorly drained soils; 4 = shrubby vegetation; 5 = loess on table land; 6 = hilly rangeland area, different grazing management patterns.

B

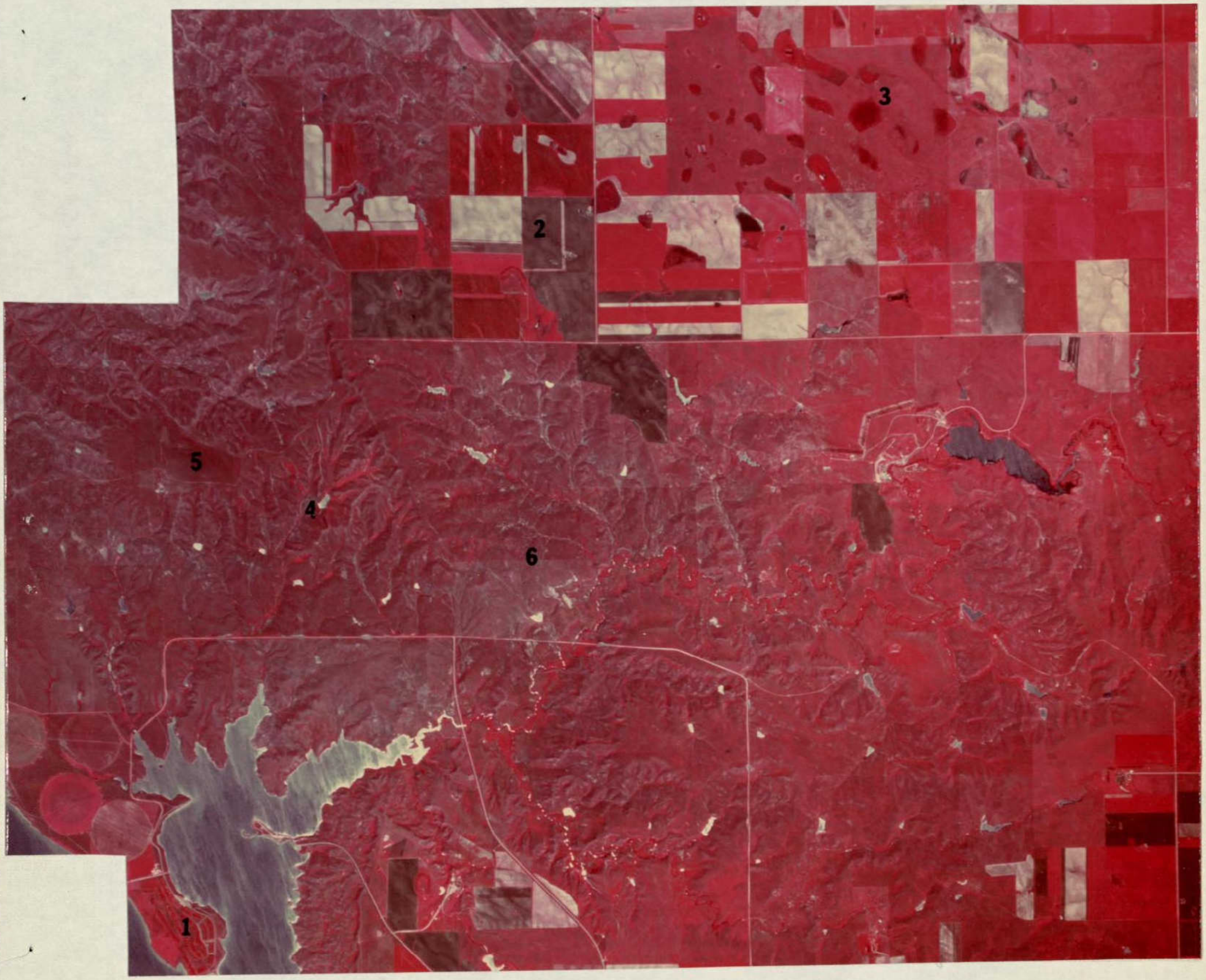


Figure 5. (Continued) RB-57 color infrared imagery.

is to increase user manipulation of the interpretive data. For example, an interpretive map of general limitations to development was developed from the general soils data and computer-plotted to fit the county road map (Fig. 6). Summary statistics were also provided (Table 2). Interpretations of the original general soils data can be obtained by simply listing the soils with similar qualities and providing this list to the computer program. Another general interpretations of the soils data was provided (Fig. 7) and aerial extents were provided automatically (Table 3).

The soils data for land evaluation from RB-57 (thirty-five soil units) were similarly digitized to provide summaries of the data by land value classes. For example, all soil units were grouped into five land value classes (Fig. 8, Table 4) and the new units computer-drawn at the scale of county road maps. These data can be regrouped to provide any other number of classes desired (e.g., maybe 10 or maybe 3) or to provide other interpretation such as for potential yield, etc.

All data were digitized at 40 acre (16.2 ha) cell units and registered (ground-referenced) to coordinates of the congressional township system. This will allow further manipulations of the data acquired by remote sensing technology such as overlay of land use and soil interpretation data as desired by planners. Or, the presentation of more soil interpretations from either the general (LANDSAT) or more detailed (RB-57) soils maps. The data can also be computer-plotted at a variety of scales as desired by the users.

To further illustrate the distribution of the land value classes in Potter County, three dimensional plots were made of the five major land classes (Fig. 9). Various subgroups (lower two value classes) were also plotted to provide relative comparisons of some low value lands hidden when all five classes were plotted.

A letter from Mr. Robert Borszich, Director of Equalization for Potter County, is in Appendix A. In the letter, Mr. Borszich describes the utility of the soil map which has already been applied to the county for land evaluation and expresses his views on its worth.

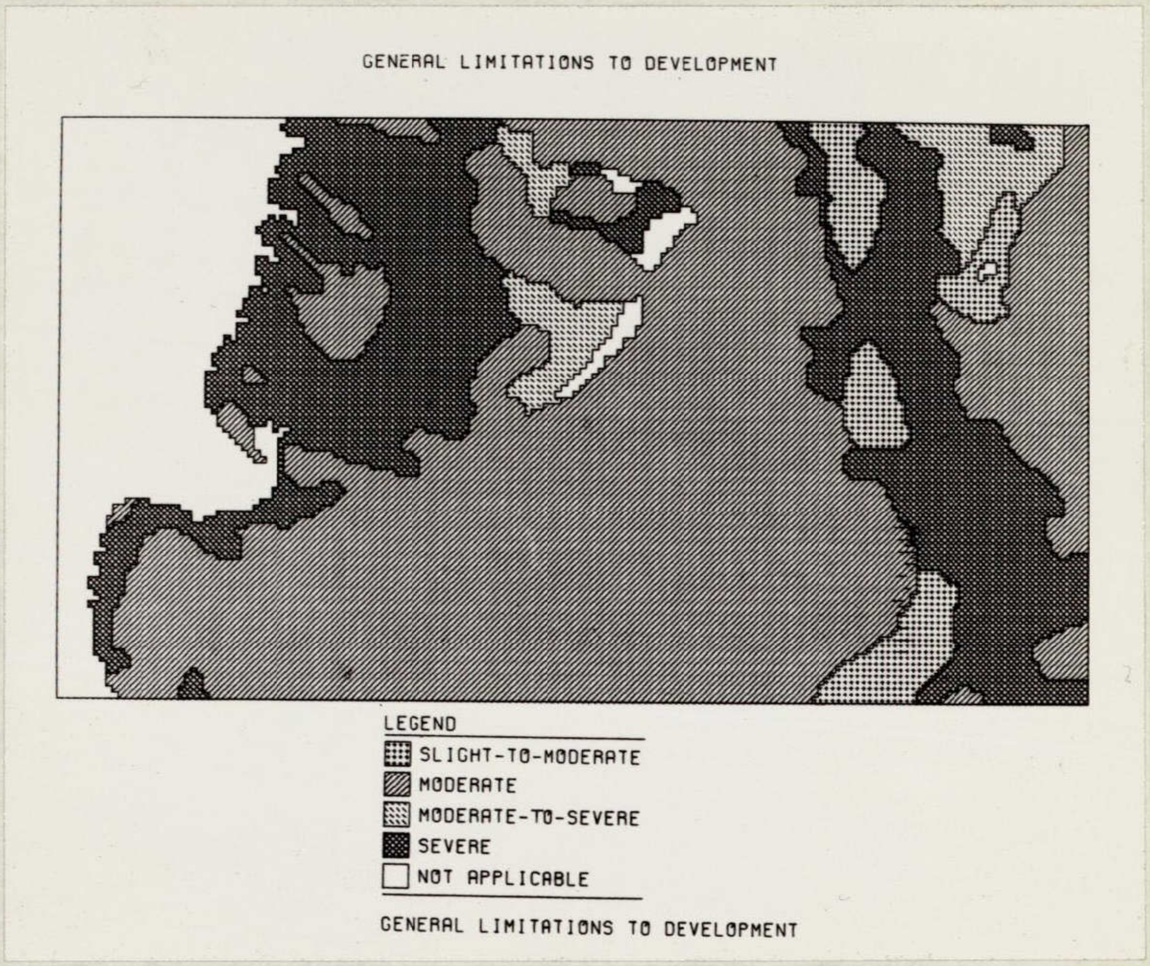


Figure 6. General limitations to development are general interpretive zones which were computer-plotted to the scale of county road maps. Data are from the general soils map derived from LANDSAT imagery. The purpose of the map is to provide an overall view of the county and is based on four to six suitability ratings for the dominant soils in each general soil mapping unit. General soils data were digitized at 16 ha (40 acre) cell resolution.

TABLE 2. GENERAL LIMITATIONS TO DEVELOPMENT (FROM GENERAL SOILS DATA)

Level	Description	Ha/Acres (X1000)	% of Area
1	Slight to Moderate	11/29	6%
2	Moderate	136/337	61%
3	Moderate to Severe	9/25	5%
4	Severe	64/158	28%
5	Not Applicable	Not Applicable	Not Applicable

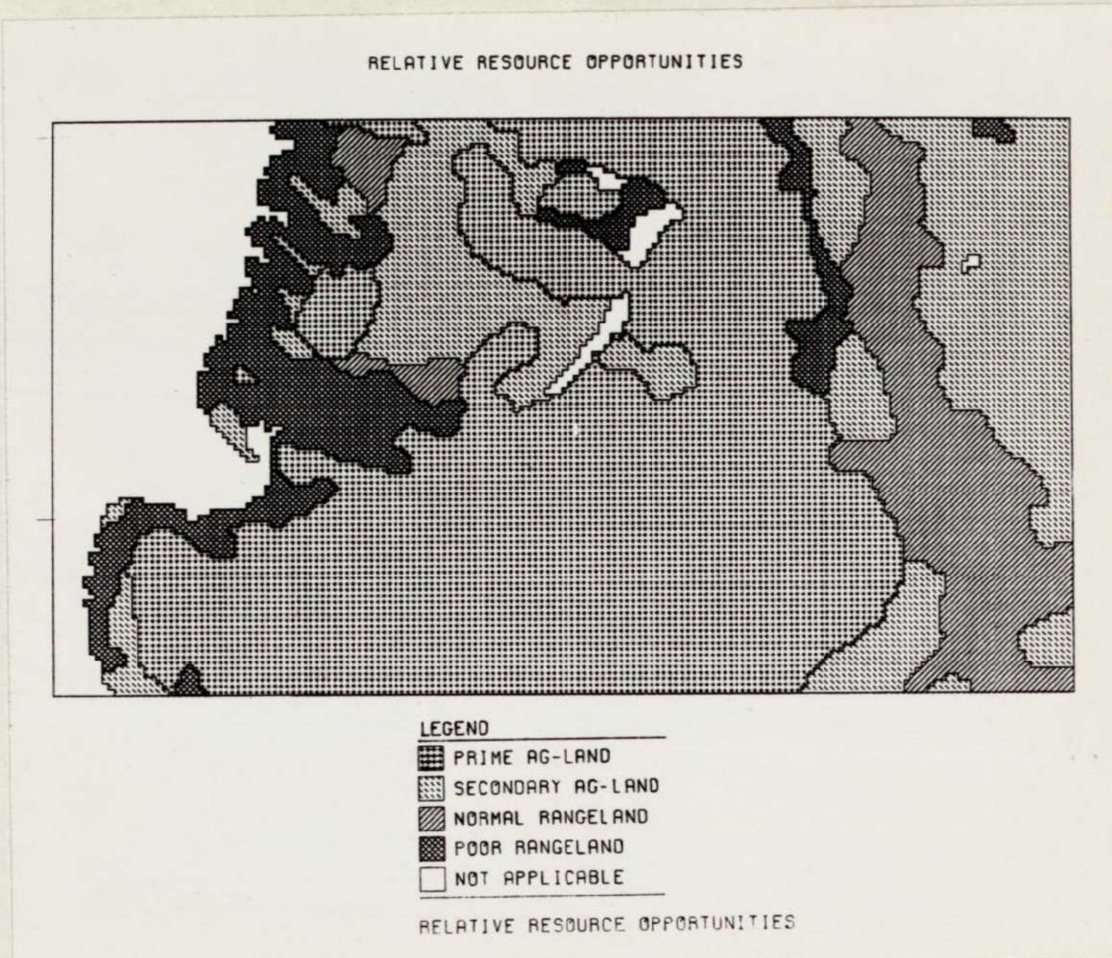


Figure 7. Relative resource opportunities is a computer-plotted interpretive map which was derived from general soils map obtained LANDSAT imagery. Map was drawn at scale of county road maps. Prime Ag-land consists of the best land for production of crops and hay in Potter County as compared to other land in the county (as interpreted from LANDSAT imagery) not to other counties in South Dakota or areas in other states. The map was generated from the same general soils data used for Figure 6.

TABLE 3. RELATIVE RESOURCE OPPORTUNITIES (FROM GENERAL SOILS DATA)

Level	Description	Ha/Acres (X1000)	% of Area
1	Best Ag-Land	116/286	52%
2	Secondary Ag-Land	53/130	24%
3	Normal Rangeland	17/71	13%
4	Poor Rangeland	25/61	11%
5	Not Applicable	Not Applicable	Not Applicable

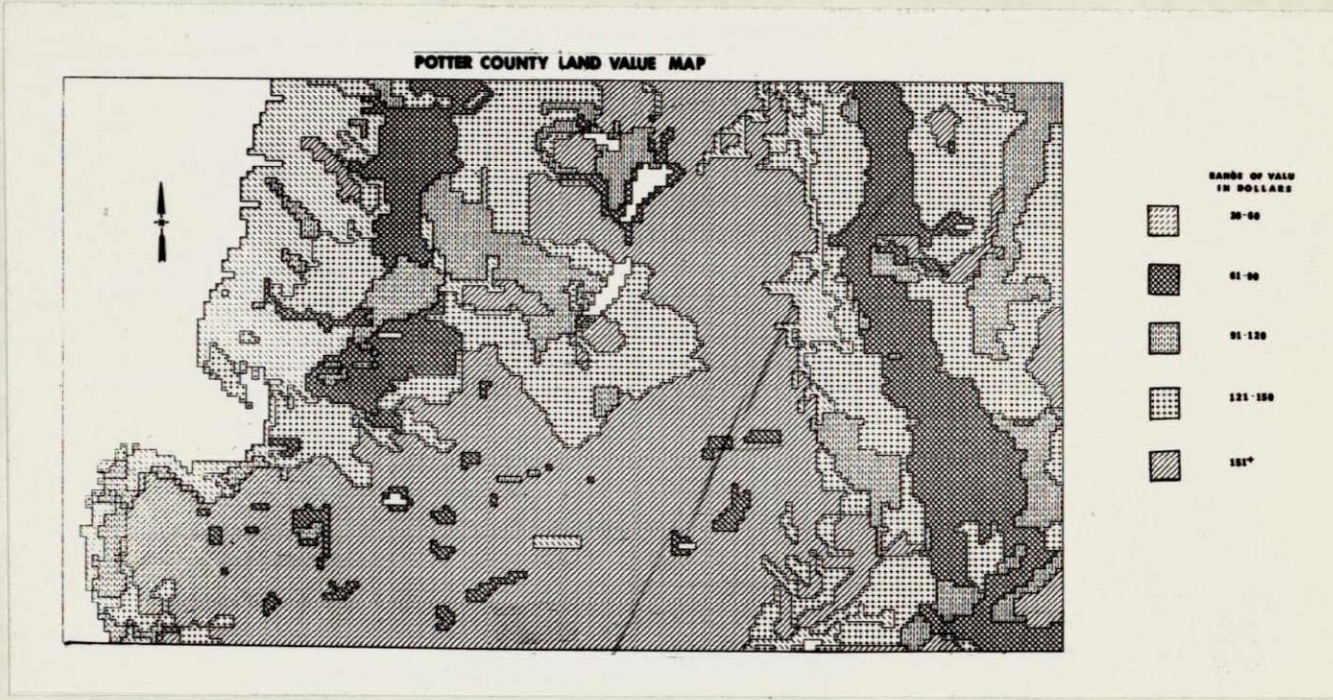


Figure 8. Potter county land value map. This computer-plotted map was drawn to fit county maps and shows the five major land value classes in Potter County. Original data (Fig. 1) were digitized at 16 ha (40 acre) cell resolution.

TABLE 4. POTTER COUNTY LAND VALUE MAP

Level	Range of Value (in dollars)	Ha/Acres (X1000)	% of Area
1	30-60	21/52	10%
2	61-90	31/78	14%
3	91-120	24/60	11%
4	121-150	55/135	24%
5	151+	92/227	41%
6	Not Applicable	Not Applicable	Not Applicable

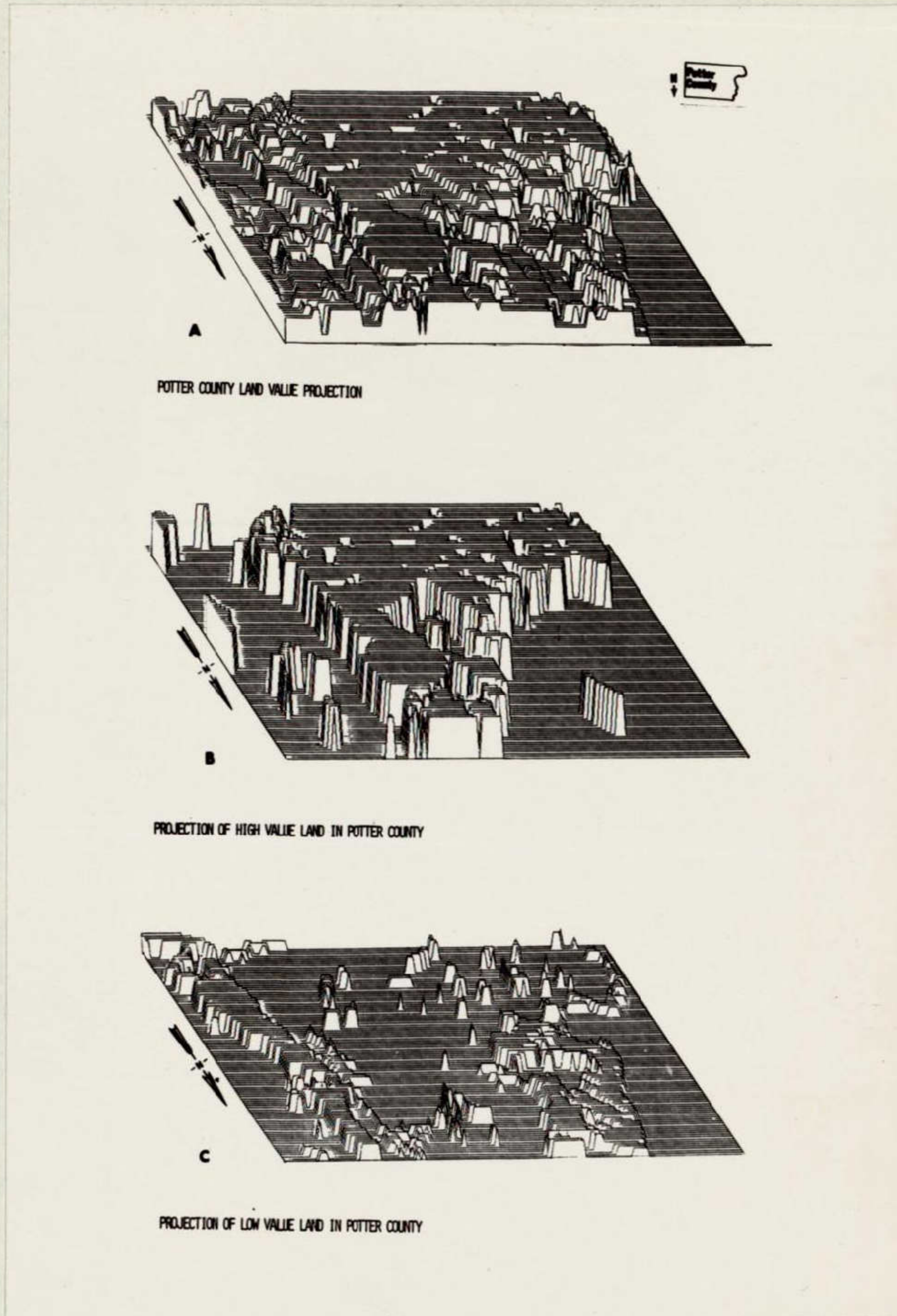


Figure 9. Three dimensional plot of land value classes in Potter County. Height of plateaus and/or peaks indicates relative value of ag-land in county. Five levels indicative of the five land value classes shown in Fig. 8 are shown in A, while only the highest value land is shown in part B. The two lower value classes marked by plateaus in A are shown in part C.

SUMMARY OF PROGRESS

Potter County

The Potter County Soil Survey for land evaluation was transferred to the Director of Equalization in June, 1976. Products described in the semi-annual and this report which have been given to the users at the present time are as follows:

1. General Land Use map drafted on clear overlay material with a June 1974 color composite background at 1:125,000 and 1:250,000.
2. General Soils map overlay on June 1974 color composite background at 1:125,000 and a May 1973 color composite background at 1.250,000 with descriptions of soil mapping units.

These items are being used to fulfill data requirements for county-wide land use planning in Potter County as required by the state. Several computer-derived and drawn interpretations also accompany the general soils map. These were general soil limitations to urban development and relative resource opportunities.

The following products have been provided to the Potter Director of Equalization for land evaluation for tax equalization:

3. A soil survey for land evaluation for tax equalization was produced and scaled to about 1:140,000 to fit the Potter county road map. This map has over twice as many soil units as the general soils map from LANDSAT.
4. These soil boundaries transferred and delineated on the large scale black and white photography and photo index sheets for reference.
5. A color infrared mosaic of Potter County at the county road map scale to provide background for the soils map for land evaluation. The map also provides an overview of the county for viewing and future planning.
6. Several computer-drawn land value maps which show the soils aggregated into 5 to 7 land value classes.
7. Tabular summaries (via the computer handling) of the areal extents of all categories in the general land use and soils and detailed soils map as well as the resulting interpretive maps and land value maps.

PROGRESS IN OTHER NASA-RELATED ACTIVITIES

Meade County

The Meade County Project (focus of funding year July 1, 1974 to June 30, 1975 and that annual report) continues to progress in the use of remote sensing data. For the original project general soils and land use were supplied from LANDSAT interpretation and the detailed land use data were interpreted from RB-57 and the data were applied to planning and zoning problems. Now, in addition to this use, the 6th Council of local governments has found use for these data (and Pennington County data) and similar data in their EPA 208 nonpoint water pollution study which includes seven counties. General land use data for Meade and Pennington County have been updated and five other counties mapped similarly to supply current land use data for these counties for the areawide study which requires current knowledge of land use areas Detailed data supplied for planning along the Black Hills (Meade County study) is also finding use in the 208 project to map certain urban categories to supply information.

The 208 study is based on the concept of combining data from different sources (e.g., soils, land use from remote sensing, etc.) for analysis which was demonstrated in the Meade County project. In Meade County detailed land use was combined with soil interpretations for planning and zoning. In the 208 study land use, soils interpretations, and watershed characteristics are being combined to spatially and statistically analyze each watershed. For example, a few items of interest are 1) area of each watershed in each land use category, 2) area of selected soil characteristics (erodability, etc.) in each watershed, and 3) area of each land use that occurs on a specific soil in each watershed. Maps showing where the combinations occur are also drawn by the integration program.

Rooftop and Other Surveys

The popularity of the applications-oriented program on rooftop temperature surveys is evidenced by the fact that RSI will fly at least 7 cities (maybe more) this winter (76-77). The program, which uses

an aerial thermal scanner system, has been widely acknowledged over the last two years and has led to apparent duplication of similar capabilities at other institutes and private firms.

NASA funding has led to the development a variety of applications of remotely-sensed data to resource problems in South Dakota. The results of these projects have led to numerous additional investigations and applications of the technology. A list of several ongoing projects and the agency and/or group involved follows:

Project Description (Objective)	Resources Investigated or Inventoried	Agency or Group Involved
Areawide 208 water quality study - (to obtain current land use and hydrological data via LANDSAT and combine these with soil interpretations for analyses	General land use Watershed basins Drainage density Longest stream	RSI inventory EPA 6th Council of Government
Detailed soil mapping project in Turner County (to investigate use of various film/filter combinations to speed soil surveys)	Soil patterns Vegetation parameters	RSI-flown Soil Cons. Serv. Old West Reg. Commission SDSU Plant Sciences
General soils for Harding County to map and associations)	General soil Parameters	Soil Cons. Serv. SDSU Plant Sciences
Map hydrologic features of Newton Hills area of Lincoln County (to investigate leakage of small impoundment)	Soil and hydrologic features of study area, drainage, etc	RSI-flown Soil Cons. Serv.

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APPENDIX A

Office of
Director of Equalization
POTTER COUNTY
Gettysburg, South Dakota 57442

January 11, 1977

Mr. Tracy L. Cox
Soils and Land Use
Remote Sensing Institue
SDSU Brookings, South Dakota

RE; R. S. I. Soil Survey Potter County

Dear Tracy;

First, I would like to apologize in not having this letter to you sooner.

My office and I have completed all of the County soil survey and valuation for assessment. A job which would have been very time consuming, had it not been for the thoroughness of your Remote Sensing Soil Survey.

We now have up to four different general classes of soils per quarter section, and tied into the capability and production records, an appraisal in which I have real confidence in and was used conclusively. Yes, there have been questions about the delination of the soils, slope percentages, and rocky soils, but with your study and our physical checking of these areas, the land owner has agreed; you have done a very good job in evaluating and establishing the way the Soils lay.

One of our County Commissioners has for years stated that a quarter section of his was valued out of line according to soil and capability. Your study has proved this to be true, and it is now corrected. Other landowners who I have visited with about your study, have agreed, we have a better equalization for assessments.

Sincerely,

Robert J. Borszich

Robert J. Borszich
Director of Equalization

RJB/dw

APPLICATION OF REMOTE SENSING

TECHNOLOGY TO ASSESSMENT OF WETLAND

HABITAT IN EASTERN SOUTH DAKOTA

PART II

ABSTRACT

The number and quality of natural wetlands is on the decline in the United States due to increased agricultural production and other causes. To lessen the impact, wildlife mitigation plans are often required. Often current data are not available for these plans. Therefore, methods that could be developed to provide an accurate, reliable and timely inventory are invaluable. Personnel from the Remote Sensing Institute and the U.S. Fish and Wildlife Service have been engaged in a joint effort to develop an operational procedure to obtain and catalog quantitative wetland habitat data using remotely-sensed imagery. These current data provide the basis for the formulation of a mitigation plan for the Oahe Unit, an irrigation district under development in eastern South Dakota which will adversely affect many natural prairie wetlands. Methodology based on remote sensing technology was developed to acquire accurate quantitative measurements in a timely manner required for an accurate evaluation of the project impact. Data were analyzed by development of computer programs capable of producing tabular summaries and spatial displays of different strata of the inventory data. Procedures were applied to the Oahe irrigation district and the agencies involved were provided with data summaries and spatial displays required to formulate a plan for maintaining or replacing wetland habitat.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

In recent years, there has been a continuing trend towards increased agricultural production with a subsequent loss of wildlife habitat. Shaw and Fredine (1971) estimated that at least 45 million acres (18.2 million hectares) of the original 127 million acres (51.4 million hectares) of natural wetlands in the United States have been drained or otherwise destroyed.

Losses of wetland habitat in South Dakota are following the national trend. About 200,000 acres (80,970 hectares) of land in the Lake Dakota Plain of Eastern South Dakota are scheduled for irrigation through development of the initial stage of the Oahe Unit - a multipurpose water resource development project under construction by the U.S. Bureau of Reclamation (Fig. 1). The general plan for the Oahe Unit involves diverting water from the Oahe Reservoir through a system of pumping plants, main and lateral canals, and several regulatory reservoirs to the Lake Dakota Plain. An assessment of the quantitative effect of the multipurpose Oahe Unit on the natural prairie wetlands is the responsibility of the U.S. Fish and Wildlife Service (FWS), under authority of the Fish and Wildlife Coordination Act. To lessen the adverse effects of certain projects such as the Oahe Unit, programs have been developed for the maintenance and restoration of wetland habitat. These programs include treaties and agreements on migratory birds and fishes, the Fish and Wildlife Coordination Act, state and federal wetland acquisition programs, Environmental Policy Act and its associated environmental assessments, Accelerated Wetland Loan Fund Act, Water Bank Act, Coastal Zone Management Act, and Endangered Species Act (Jahn 1975).

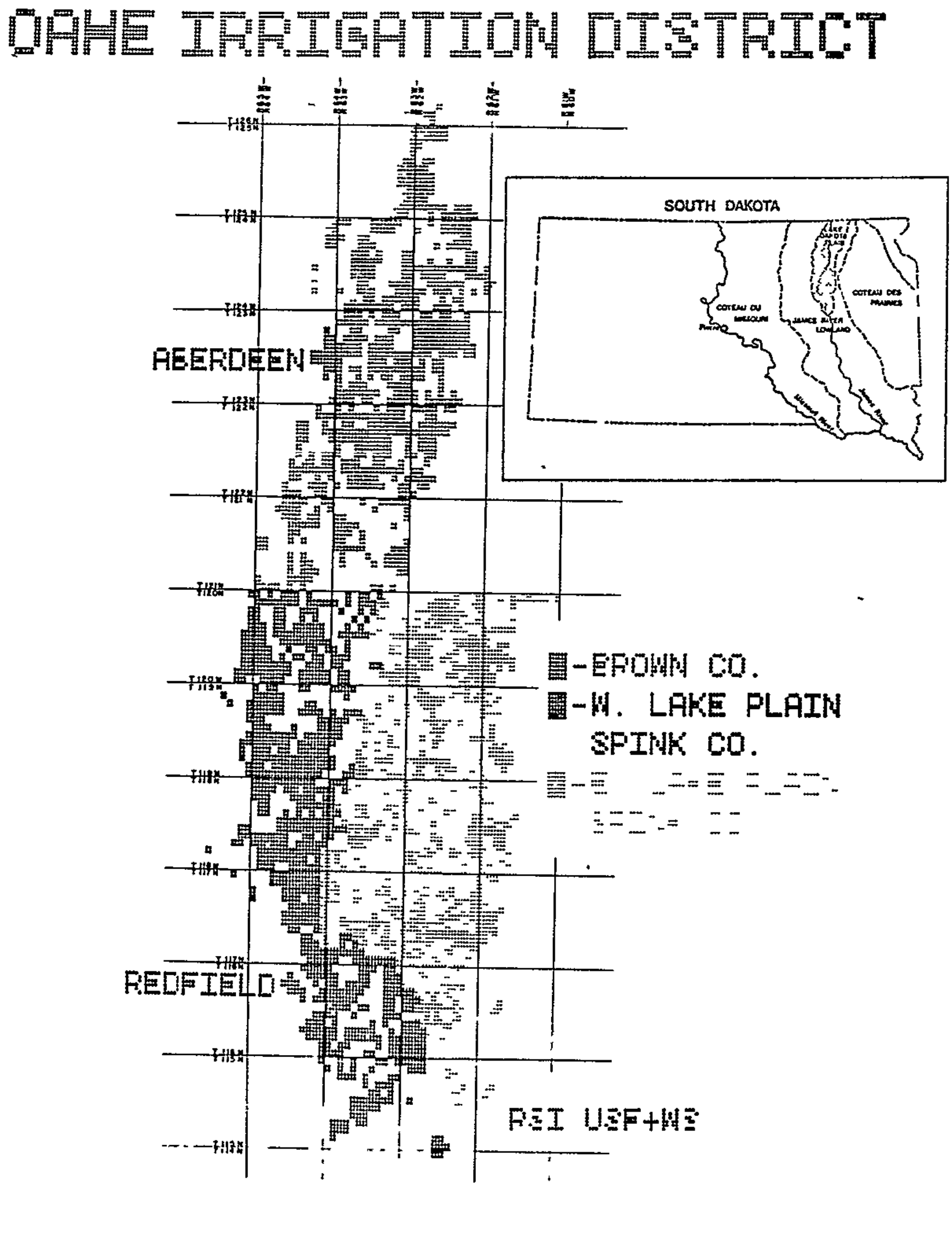

Figure 1. Computor overstrike display of Oahe irrigation district.

Wetlands which hold water for a short time following snow melt or heavy rainfall are common throughout the proposed area. These wetlands are incompatible with sprinkler or flood irrigation and will be drained or leveled during irrigation development. Quantitative wetland data are required to formulate a plan for maintaining or replacing these wetland habitat losses. Aerial photography is recognized as the best source of morphometric information on water bodies. However, accurate inventories of many types of wetlands are difficult because of their small size, intermittance of standing water, masking effects of agricultural practices and the availability of timely data. Best, Moore, and Brewster (1976) concluded that the presence of hydrophytes as well as water regime parameters could be interpreted on color-infrared imagery, improving the accuracy of an inventory and classification of temporary prairie wetlands. Black and white enlargements made from color-infrared film has been recommended over those made from panchromatic film in a New Jersey pilot project concerned with mapping wetlands. The study by the Earth Satellite Corporation and the Mark Hurd Aerial Survey (1975) concluded that the quality of images was comparable to the panchromatic enlargements and that enlargements from color-infrared film depicted a much greater variety of tones representing different variations in vegetation species.

Traditional inventories have used low altitude black and white panchromatic photos and are generally limited to areas the size of a county. These data are often collected during summer months for other inventory purposes which makes it difficult to interpret temporary wetlands which no longer contain standing water.

Conventional determination of area with either a compensating polar planimeter or a series of grids, as well as cataloging these data, consumes costly manual labor.

The objective of the present study was to provide a current wetlands inventory of the Oahe Unit using high-altitude color-infrared aircraft imagery by developing a reliable photo interpretation procedure and a system of cataloging, summarizing, and analyzing large quantities of quantitative wetland data. Black and white enlargement prints of RB-57 imagery were used for the actual inventory and an electronic planimeter system and computer programs were developed to rapidly process the wetlands inventory data. Data were supplied to the FWS for formulation of a mitigation plan for the project area.

STUDY AREA

The proposed Oahe Unit is located in the Lake Dakota Plain which is part of the James River Lowland and is characterized by a lack of relief. The flatness results from the deposition of sediments in Glacial Lake Dakota, which existed during the last deglaciation of the region (Flint, 1955). Local relief in many places is less than 10 ft. (3 meters). The area is drained by the James River dividing the unit into two areas, which for the purpose of this report, will be called the West Lake Plain and the East Plain (Fig. 1). Approximately 310,000 acres (125,500 hectares) which occur in a checkerboard pattern are included in the Oahe Irrigation district, however, only about 200,000 acres (80,970 hectares) are suitable for irrigation development.

PROCEDURES

Contacts between RSI and U.S. Fish and Wildlife Service (FWS) personnel led to the identification of the need for a current wetland inventory in the Lake Dakota Plain of Eastern South Dakota. Discussions led to the fact that mitigation plans were to be formulated but current data were not adequate for planning. Remote sensing technology was suggested by RSI personnel as a possible means for providing an updated assessment of wetlands. A letter from Rolf Wallenstrom, Area Manager for FWS, is in Appendix C. This letter indicates the interest and confidence of the FWS in using remote sensing technology for the wetland assessment and their willingness to work with RSI. An overview of the procedures and work implemented for the FWS are as follows:

1) Preliminary meetings were held with the FWS to identify data needs for wetland inventory for mitigation plans.
2) RB-57 imagery for Lake Dakota Plain was obtained and black and white enlargements were prepared for study area.
3) Interpretation techniques were developed and documented by Best et al. (1976).
4) Data were photointerpreted and transferred to acetate overlays for determination of area in different wetland types.
5) Spatial Data (automatic planimetering) methods were developed for areal measures.
6) Programs were written to analyze spatial data by various strata.
7) Maps and tabular data were furnished to FWS for formation of mitigation plan.

A discussion of procedures and techniques developed in this project follows.

Wetland Definitions

Wetlands are defined in this report as depressions which contain shallow and sometimes temporary or intermittent waters. In a preliminary investigation Best et al. (1976) documented the use of color-infrared photography to classify wetlands according to the "types" defined by Shaw and Fredine (1971). Wetland types with similar characteristics were grouped and several other types of comparable habitat were included to augment the biological interpretation of the wetland inventory. The seasonally flooded basins (Type 1) and inland fresh meadows (Type II) were included in a single group because in both cases the basins are generally without water during the growing season and most are tilled and planted to agricultural crops (Fig. 2). Inland shallow fresh marshes (Type III), inland deep marshes (Type IV), and inland open fresh water (Type V), were grouped because, in a normal year, the basin soils are water-logged or covered with water during the growing season making them incompatible with agricultural crops (Fig. 3). Artificial wetlands, including dugouts, stock dams and lagoons, were grouped and considered separately from natural wetland habitat even though most were located within or along the periphery of natural wetlands. (Fig. 4).

Two additional types of habitat, which are important to the waterfowl of the area and which will be altered because of project construction, were interpreted and kept separate from other categories of wetlands. Semi-permanent and permanent streams in the irrigation district support stands of hydrophytes and provide waterfowl with brood-rearing habitat when less permanent wetlands are dry (Fig. 5). The James River was not included as part of the inventory but its tributaries were. Intermittent natural

Fig. 2 Aircraft oblique of Type I wetlands in Oahe Unit.

Note the location of basins is within agricultural fields.

Fig. 3 Aircraft oblique of Type IV wetlands.

Note presence of emergent vegetation and location of agricultural crops only on the periphery.

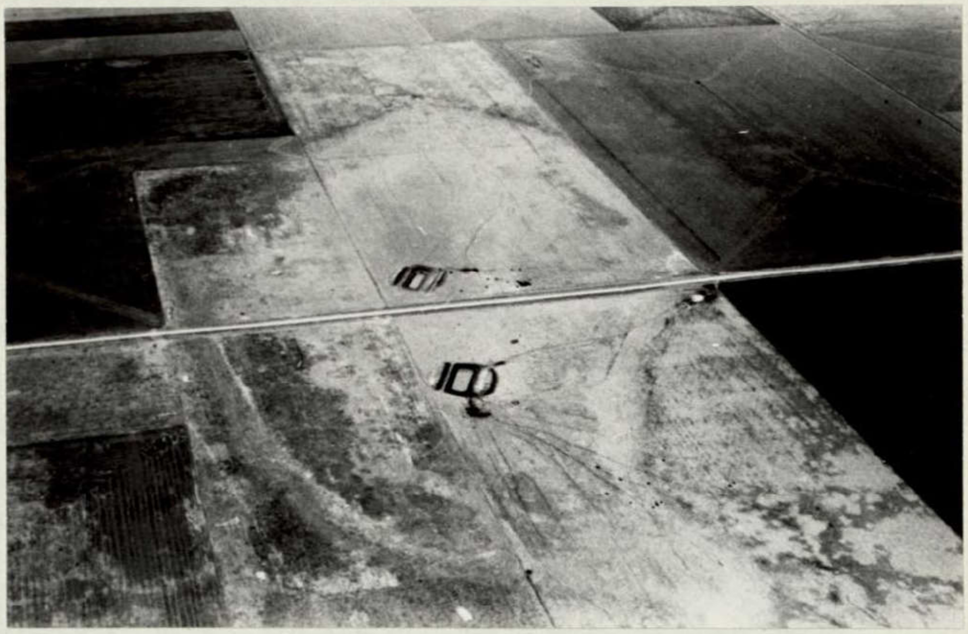

Fig. 4 Aircraft oblique of artificial wetlands (dugouts).
Note their location within Type I wetland.

Fig. 5 Aircraft oblique of stream characteristic of the irrigation district.
Note the presence of emergent vegetation in stream channel.

drainage ways (Fig. 6), which included areas in natural drains with habitat similar to Type I, were also interpreted and kept in a separate category.

Imagery and Analysis

A NASA RB-57 aircraft collected color-infrared imagery of the Oahe Unit on 27 June 1975 (Mission 312). Interpretations were made on black and white enlargement prints exposed from the color-infrared transparencies. Each print was scaled during photographic printing to correct scale differences on original imagery. Forty enlargement prints were randomly selected to determine the scale and variability. The mean scale was 1:12,590 with a coefficient of variability of 1.0%. The variance of scale was not considered as a significant source of error in the area measurement. Field checking and low-altitude aerial reconnaissance of a selected sample proved no misclassification of habitat type and no significant differences in the delineation of basin extent.

Interpretations were transferred to clear acetate overlays and area measurements were made on the Spatial Data (Data Color 703) unit of RSI's Signal Analysis and Dissemination Equipment (SADE). Included in the Spatial Data unit are a closed circuit television camera, a constant illumination light box and an electronic digital planimeter which measures relative areas of one or more of 32 density levels when used in conjunction with the color display monitor (Fig. 7). The total area of each of four wetland types was measured as a percentage of the 160 acre (64.8 hectares) unit cell. To determine the accuracy of the electronic digital planimeter, forty quarter sections were randomly selected from the irrigation district and the

Fig. 6 Aircraft oblique of intermittent natural drain.

Note similarity to Type I habitat.

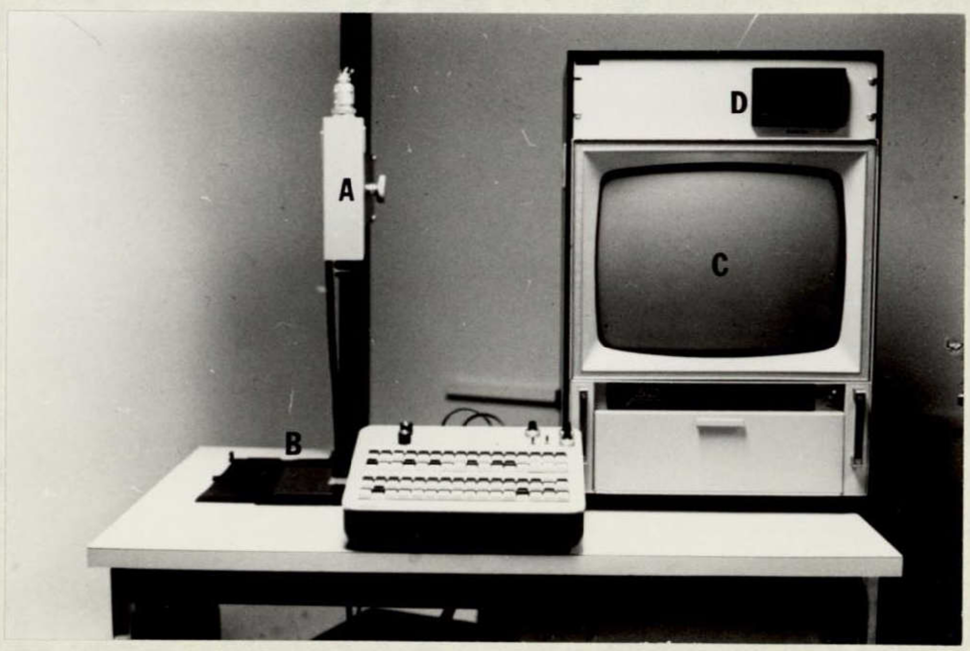

Fig. 7 Spatial Data (Data Color 703) unit used for area measurements.

A. Television camera
B. Constant illumination light box
C. Color display monitor
D. Electronic digital planimeter

wetland areas were measured with a compensating polar planimeter. Statistical analysis indicated that the mean difference between the wetland acres per cell as measured on Spatial Data and that measured with the planimeter was $0.08 \pm .07$ acres ($0.03 \pm .03$ hectares) at the .05 confidence level The number of wetlands as well as the area measurements for each unit cell was encoded into a computerized data bank. Also encoded into the data bank were the legal description, dominant irrigation class, and spatial distribution. The spatial analysis system that was developed has the capability of producing tabular summaries and spatial displays of the data required for the optimal biological interpretation of the wetland inventory.

RESULTS AND DISCUSSION

Table 1 is a summary of each habitat stratified by three areas, the area scheduled for irrigation in Brown County, the area east of the James River in Spink County, and the area west of the James River in Spink County, respectively. Wetland totals are separated from stream and natural drainage habitat types. It was assumed that wetlands will be destroyed because of their incompatability with irrigation techniques; however, most streams and drains will be used as main or on-farm drains and will not be destroyed, but will be greatly altered by increased flows from irrigation runoff. In order to aquire a more detailed comprehension of habitat data, they were stratified into township units and summarized in Table 2. The habitat data were catalogued and can be recalled by the legal description of quarter section cells. A complete listing of data by legal description is included in Appendix A.

TABLE 1. REGIONAL SUMMARY OF WETLAND HABITAT DATA.

	IRRIGATION DISTRICT ACRES	TYPE I&II		TYPE III,IV&V		ARTIFICIAL WETLANDS		TOTAL WETLAND		STREAMS	NATURAL DRAINS
		NUMBER	ACRES	NUMBER	ACRES	NUMBER	ACRES	NUMBER	ACRES	ACRES	ACRES
BROWN COUNTY	93580.	2183.	2027.0	7.	640.0	89.	41.2	2279.	2708.2	649.9	157.0
EAST LAKE PLAIN SPINK COUNTY	115250.	1239.	1266.4	1.	67.0	98.	25.5	1338.	1358.9	442.4	243.4
WEST LAKE PLAIN SPINK COUNTY	101960.	1532.	1676.5	13.	1736.5	143.	50.2	1688.	3463.2	453.0	188.4
TOTALS	310790.	4954.	4969.8	21.	2443.5	330.	116.9	5305.	7530.2	1545.3	588.8

TABLE 2. WETLAND HABITAT DATA SUMMARIZED BY TOWNSHIPS.

TOWNSHIP	RANGE	IRRIGATION DISTRICT ACRES	TYPE I&II NUMBER	TYPE I&II ACRES	TYPE III,IV&V NUMBER	TYPE III,IV&V ACRES	ARTIFICIAL WETLANDS NUMBER	ARTIFICIAL WETLANDS ACRES	TOTAL WETLAND NUMBER	TOTAL WETLAND ACRES	STREAMS ACRES	NATURAL DRAINS ACRES
114N	61W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
114N	62W	240.	4.	10.7	0.	0.0	1.	0.2	5.	10.9	0.0	0.0
114N	63W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
114N	64W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
114N	65W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
115N	61W	480.	7.	7.2	0.	0.0	0.	0.0	7.	7.2	0.0	0.0
115N	62W	4100.	50.	78.2	0.	70.7	8.	1.9	58.	150.8	0.0	6.9
115N	63W	6080.	42.	36.1	0.	0.0	16.	3.5	58.	39.6	15.2	13.0
115N	64W	50.	1.	5.8	0.	0.0	0.	0.0	1.	5.8	0.0	0.0
115N	65W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
116N	61W	480.	20.	13.4	0.	0.0	1.	0.2	21.	13.6	0.0	0.0
116N	62W	13310.	92.	132.3	1.	39.0	13.	3.1	106.	174.4	29.1	57.6
116N	63W	12500.	164.	193.9	2.	143.3	31.	6.7	197.	343.9	0.0	10.8
116N	64W	3860.	60.	35.3	0.	0.0	6.	1.3	66.	36.6	19.0	0.0
116N	65W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
117N	61W	3480.	14.	8.4	0.	0.0	2.	0.5	16.	8.9	56.5	16.3
117N	62W	16880.	89.	101.0	0.	0.0	8.	2.2	97.	103.2	79.7	24.2
117N	63W	13110.	245.	196.1	0.	0.0	5.	1.5	250.	197.6	6.1	23.8
117N	64W	10710.	225.	205.8	0.	0.0	16.	3.8	241.	209.6	47.9	24.9
117N	65W	160.	5.	0.3	0.	0.0	0.	0.0	5.	0.3	0.0	0.0
118N	61W	4400.	47.	43.3	0.	0.0	4.	1.0	51.	44.3	11.2	10.7
118N	62W	8840.	132.	99.8	0.	0.0	7.	1.7	139.	101.5	25.7	11.5
118N	63W	13560.	143.	190.8	2.	18.4	15.	4.0	160.	213.2	4.1	15.0
118N	64W	14360.	344.	261.9	1.	10.6	19.	5.2	364.	277.7	174.9	34.4
118N	65W	640.	54.	14.1	0.	0.0	0.	0.0	54.	14.1	26.1	0.0
119N	61W	3560.	58.	53.7	0.	0.0	7.	2.0	65.	55.7	0.0	0.0
119N	62W	10080.	117.	178.1	0.	0.0	11.	3.1	128.	181.2	9.8	52.5
119N	63W	8560.	90.	88.1	0.	0.0	2.	0.6	92.	88.7	14.3	7.0
119N	64W	15860.	182.	127.1	2.	381.1	19.	7.0	203.	515.2	150.8	28.0
119N	65W	1600.	27.	10.6	0.	0.0	3.	0.8	30.	11.4	24.8	0.0
120N	61W	5110.	71.	31.8	0.	0.0	4.	1.3	75.	33.1	0.0	0.0
120N	62W	16640.	152.	125.7	0.	0.0	13.	3.0	165.	128.7	145.0	46.1
120N	63W	9270.	91.	149.5	0.	0.0	3.	0.8	94.	150.3	55.2	10.8
120N	64W	14970.	160.	488.1	4.	950.1	23.	19.0	187.	1457.2	0.0	38.3
120N	65W	2320.	85.	55.8	2.	190.3	5.	1.3	92.	247.4	0.0	0.0
121N	61W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
121N	62W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
121N	63W	5880.	36.	21.0	0.	0.0	2.	0.4	38.	21.4	11.1	11.7
121N	64W	7320.	46.	89.3	1.	209.4	9.	4.7	56.	303.4	50.9	16.0
121N	65W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
122N	61W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
122N	62W	5090.	37.	82.6	0.	0.0	4.	1.0	41.	83.6	60.3	20.7
122N	63W	13320.	165.	81.7	0.	9.9	3.	1.2	168.	92.8	144.0	30.5
122N	64W	6980.	129.	191.3	0.	9.6	2.	0.5	131.	201.4	66.4	14.7
122N	65W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
123N	61W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
123N	62W	10180.	164.	171.8	1.	21.3	19.	10.5	184.	203.6	0.0	15.8
123N	63W	13430.	449.	359.4	0.	0.0	13.	4.6	462.	364.0	76.2	29.8
123N	64W	40.	0.	0.0	0.	0.0	1.	0.1	1.	0.1	0.0	0.0
123N	65W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
124N	61W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
124N	62W	8750.	207.	217.7	3.	31.8	6.	1.5	216.	251.0	16.1	5.4
124N	63W	11040.	389.	376.5	0.	0.0	6.	10.4	395.	386.9	147.1	0.0
124N	64W	1580.	225.	119.6	0.	0.0	1.	0.3	226.	119.9	2.7	3.8
124N	65W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
125N	61W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
125N	62W	5450.	69.	59.1	1.	358.0	9.	2.1	79.	419.2	19.7	3.4
125N	63W	3480.	191.	152.5	0.	0.0	10.	2.8	201.	155.3	55.4	5.2
125N	64W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
125N	65W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
126N	61W	0.	0.	0.0	0.	0.0	0.	0.0	0.	0.0	0.0	0.0
126N	62W	720.	25.	15.2	0.	0.0	3.	0.8	28.	16.0	0.0	0.0
126N	63W	160.	33.	82.9	0.	0.0	0.	0.0	33.	82.9	0.0	0.0
126N	64W	160.	18.	6.4	0.	0.0	1.	0.3	19.	6.7	0.0	0.0
TOTALS		310790.	4954.	4969.8	21.	2443.5	330.	116.9	5305.	7530.2	1545.3	588.8

The Oahe irrigation district consists of approximately 310,000 acres (125,500 hectares), but project guidelines allow for only 160 acres (64.8 hectares) per farm (≈190,000 acres total) to be irrigated annually. About 70% of the irrigation district has no limitations to irrigation development (irrigation classes 1, 2, 3) and another 10% (irrigation class 5) can be irrigated if deep plowing techniques are used. Much of the remaining land (irrigation class 6) is in the flood plain of the James River and its tributaries and has only a limited potential for irrigation development. Table 3 is a summary of data stratified by the dominant irrigation class within each cell. Table 4 is a further stratification of these data including both the regional distribution and the dominant irrigation class. Stratification of data by irrigation classes provides the basis for an assessment of the initial impact and allows location those of areas which will be most adversely affected.

Further processing of the data can produce spatial displays (maps) or raw data or data summaries. Printer overstrike displays (see Fig. 1) can be obtained or data can be plotted (computerdrawn) to match any scale. A color encoded display which was produced via the color display monitor of the SADE system is included in Fig. 8.

The methods developed in this study provide a reliable inventory in the short time frame required for an accurate evaluation of temporary wetland habitat. The following table is an estimate of time required to complete the inventory (not including technique development).

TABLE 3. SUMMARY OF WETLAND HABITAT DATA BY IRRIGATION CLASS.

DOMINANT IRR. CLASS	IRRIGATION DISTRICT ACRES	TYPE I&II NUMBER	TYPE I&II ACRES	TYPE III,IV&V NUMBER	TYPE III,IV&V ACRES	ARTIFICIAL WETLANDS NUMBER	ARTIFICIAL WETLANDS ACRES	TOTAL WETLAND NUMBER	TOTAL WETLAND ACRES	STREAMS ACRES	NATURAL DRAINS ACRES
1,2,&3	221380.	3033.	2901.4	10.	943.7	199.	78.7	3242.	3923.8	891.4	415.6
5	29710.	587.	560.1	1.	15.7	35.	13.3	623.	589.1	47.2	26.2
6	42870.	717.	972.6	9.	1473.9	80.	20.4	806.	2466.9	516.6	127.9
UNKNOWN	16830.	617.	535.7	1.	10.2	17.	4.5	635.	550.4	90.1	19.1
TOTALS	310790.	4954.	4969.8	21.	2443.5	330.	116.9	5305.	7530.2	1545.3	588.8

TABLE 4. WETLAND HABITAT DATA SUMMARIZED BY REGION AND IRRIGATION CLASS.

	IRRIGATION DISTRICT ACRES	TYPE I&II NUMBER	TYPE I&II ACRES	TYPE III,IV&V NUMBER	TYPE III,IV&V ACRES	ARTIFICIAL WETLANDS NUMBER	ARTIFICIAL WETLANDS ACRES	TOTAL WETLAND NUMBER	TOTAL WETLAND ACRES	STREAMS ACRES	NATURAL DRAINS ACRES
BROWN COUNTY											
1,2,&3	61280.	1275.	1039.2	1.	123.7	58.	28.5	1334.	1191.4	315.9	104.8
5	6830.	178.	145.6	0.	8.7	9.	6.5	187.	160.8	33.8	2.4
6	13020.	219.	388.7	5.	497.4	10.	3.0	234.	889.1	230.2	30.7
UNKNOWN	12450.	511.	453.5	1.	10.2	12.	3.2	524.	466.9	70.0	19.1
EAST LAKE PLAIN SPINK COUNTY											
1,2,&3	85770.	828.	843.6	0.	60.0	60.	15.7	888.	919.3	264.2	188.3
5	16800.	286.	247.5	1.	7.0	18.	4.4	305.	258.9	9.4	17.6
6	11280.	89.	148.7	0.	0.0	20.	5.2	109.	153.9	168.8	37.5
UNKNOWN	1400.	36.	26.6	0.	0.0	1.	0.2	37.	26.8	0.0	0.0
WEST LAKE PLAIN SPINK COUNTY											
1,2,&3	74330.	930.	1018.7	8.	760.0	81.	34.5	1019.	1813.2	311.3	122.5
5	6080.	123.	167.0	0.	0.0	8.	2.4	131.	169.4	4.0	6.2
6	18570.	409.	435.2	4.	976.5	50.	12.2	463.	1423.9	117.6	59.7
UNKNOWN	2980.	70.	55.6	0.	0.0	4.	1.1	74.	56.7	20.1	0.0
TOTALS	310790.	4954.	4969.8	21.	2443.5	330.	116.9	5305.	7530.2	1545.3	588.8

28-

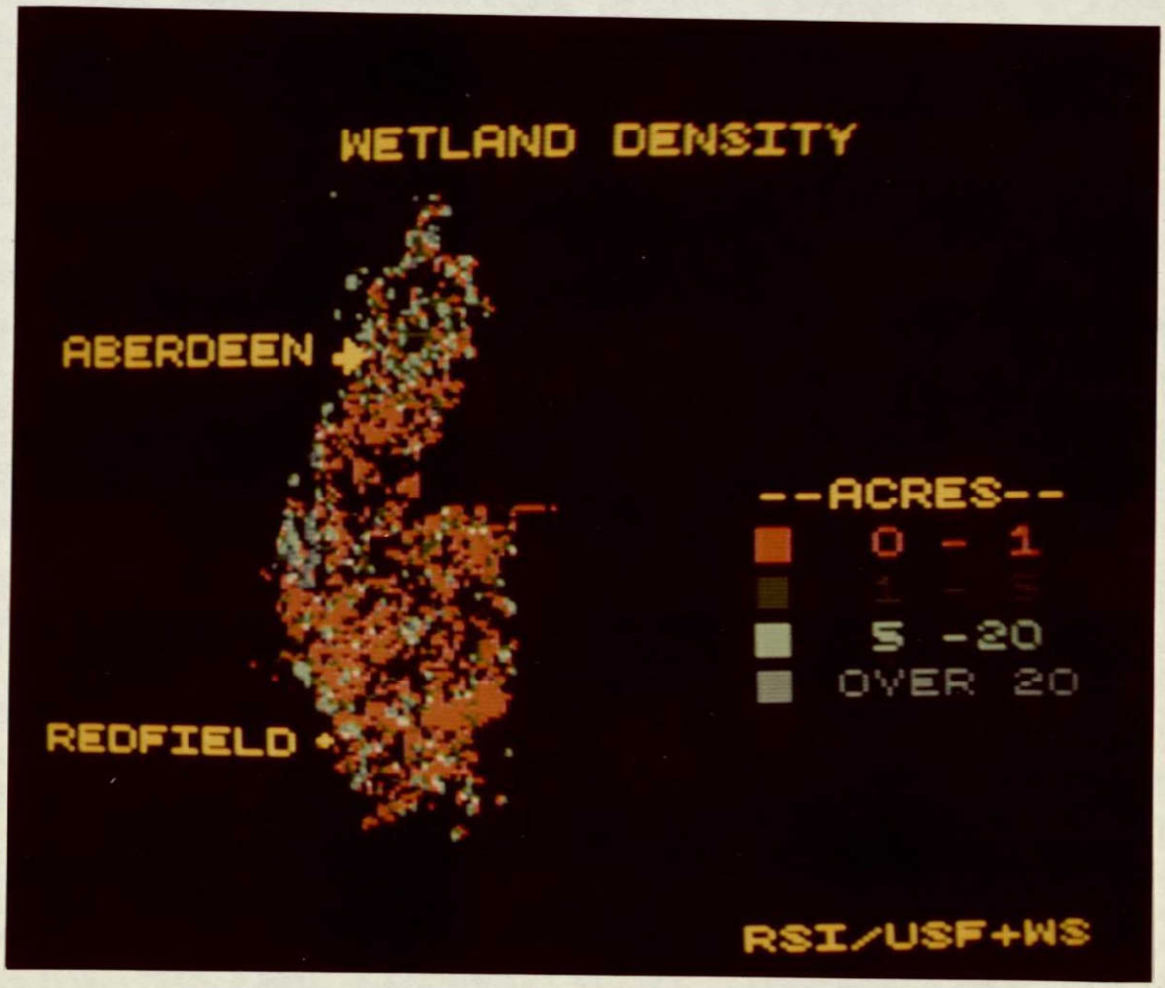

Fig. 8 Example color-encoded display produced via color display monitor of SADE system.

TABLE 5

Estimate of time required to complete inventory of 310,000 acres (125,500 hectares)*

	labor	equipment
Familiarization with area	80 man hours	
Interpretation	240 man hours	
Verification	40 man hours	8 hrs. AIRCRAFT
Area measurement**	50 man hours	23 hrs. SPATIAL DATA
Data storage & retrieval (tabular summaries, lists displays)	15 man hours	3 min CPU IBM 370/145
TOTAL	425 man hours	

* The estimates do not include time required to procure and catalog original imagery.

** Based on the time required to measure the wetlands in 40 quarter sections with a compensating polar planimeter ≈ 480 man hours would be required to make measurements for the same area using this method. Considerably more time would be required to produce data summaries and displays without the aid of a computerized storage and retrieval system.

CONCLUSIONS

Methodology developed during this project will provide an accurate and timely inventory of prairie wetland habitat in a large, predominantly agricultural area. Ephemeral wetland types can be interpreted on color-infrared imagery more accurately than on panchromatic black and white photography. Hydropytes which grow in the basins reflect higher in the infrared than most surrounding vegetation making a reliable interpretation possible even without water standing in the basin. The high infrared reflectance of small grains masked waterlogged soils and hydrophytes in basins within fields of growing small grain. Only that portion of the wetland basin which contained standing water at the time of data collection could be delineated. The area measurement technique developed in this project proved to be an accurate and timely method of making area measurement for the large area that was inventoried. Computer programs written to store and analyze the spatial data greatly reduced the time required to produce data summaries and spatial displays.

The utility of remote sensing for wetland assessment in Eastern South Dakota was documented by a second letter (Appendix B, July 1976) from Mr. Rolf Wallenstrom, Area Manager for FWS. His remarks are positive and illustrative of another important application of remote sensing technology to current problems in South Dakota.

SUMMARY OF PROGRESS

The Lake Dakota Plain area to be adversely affected by the development of the Oahe irrigation project was inventoried using black and white prints of RB-57 color-infrared imagery. Techniques developed and products formulated to aid the FWS in drawing up mitigation plans for the Oahe Unit are as follows:

1. Develop and document interpretation techniques
2. Habitat maps of wetland types on black and white prints of color-infrared imagery.
3. Acetate copies of the wetland maps for determination of acreage on spatial data.
4. Program for analyzing the wetland data by strata (e.g., wetland types, irrigation districts) and producing tabular data.
5. Technique developed and tested for electronic planimetering of wetland data for areal summaries.
6. Maps and tabular data of results were furnished to FWS for assessment of wetlands with documentation of approach.

LITERATURE CITED

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APPENDIX A

DATA LISTING PAGE 1

1/	2/	3/	4/	5/	6/	7/	8/	9/	10/	11/	12/	13/	14/	15/
125	63	36	B	160	4.0	31.0	0.0	0.0	0.0	0.0	1.0	0.2	1	1
125	63	36	A	160	2.0	9.0	0.0	0.0	0.0	0.0	1.0	0.3	1	1
125	63	35	C	80	32.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0	5	1
125	63	35	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	63	36	C	80	2.0	37.4	0.0	0.0	0.0	0.0	1.0	0.3	6	1
125	62	30	B	160	2.0	0.8	0.0	0.0	1.3	0.0	0.0	0.0	1	1
125	62	30	A	160	3.0	0.6	0.0	0.0	2.1	0.0	1.0	0.3	1	1
125	62	29	B	80	3.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	30	C	160	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	30	D	160	2.0	0.1	0.0	0.0	0.0	0.0	2.0	0.3	1	1
125	62	31	B	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	31	A	160	0.0	0.0	0.1	1.3	0.0	0.0	0.0	0.0	1	1
125	62	32	B	160	0.0	0.0	0.1	21.1	0.0	0.0	0.0	0.0	6	1
125	62	32	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
125	62	32	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1

1/ Township
2/ Range
3/ Section
4/ Quarter Section B A

C D

5/ Irrigation District Acres
6/ Number of Type I & II Wetlands
7/ Type I & II Acres
8/ Number of Type III, IV, & V Wetlands
9/ Type III, IV, & V Acres
10/ Acres of Intermittent Natural Drainageways
11/ Acres of Permanent and Semi-permanent Streams
12/ Number of Artificial Wetlands
13/ Acres of Artificial Wetlands
14/ Dominant Cell Irrigation Class
- 1 = Class 1, 2, & 3
- 5 = Class 5
- 6 = Class 6
- 7 = Unknown

15/ Region
- 1 = Brown County
- 2 = East Lake Plain; Spink County
- 3 = West Lake Plain; Spink County

126	64	27	D	160	18.0	6.4	0.0	0.0	0.0	0.0	1.0	0.3	7	1
126	63	36	B	160	11.0	42.9	0.0	0.0	0.0	0.0	0.0	0.0	7	1
126	62	29	D	160	0.0	4.0	0.0	0.0	0.0	0.0	1.0	0.3	7	1
126	62	31	A	160	4.0	8.2	0.0	0.0	0.0	0.0	1.0	0.3	7	1
126	62	32	A	160	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	7	1
126	62	31	C	80	18.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	6	1
126	62	32	C	160	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.2	7	1
125	63	1	A	120	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	6	1
125	63	1	D	160	7.0	4.2	0.0	0.0	0.0	0.0	1.0	0.3	5	1
125	63	12	A	120	3.0	0.3	0.0	0.0	0.0	6.6	0.0	0.0	1	1
125	63	12	D	160	3.0	0.6	0.0	0.0	0.0	25.0	1.0	0.3	6	1
125	62	6	B	160	31.0	4.5	0.0	0.0	0.0	2.9	1.0	0.3	1	1
125	62	6	A	160	3.0	0.8	0.0	0.0	0.0	0.3	0.0	0.0	1	1
125	62	5	B	160	5.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	5	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	6	C	160	3.0	5.4	0.0	0.0	0.0	4.0	0.0	0.0	1	1
125	62	6	D	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	5	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
125	62	5	D	60	0.0	0.0	0.1	17.3	0.0	0.0	0.0	0.0	6	1
125	62	7	B	160	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	1	1
125	62	4	B	120	0.0	0.0	0.1	64.8	0.0	0.0	0.0	0.0	6	1
125	62	4	C	10	0.0	0.0	0.1	6.4	0.0	0.0	0.0	0.0	6	1
125	63	13	B	80	7.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	63	13	A	150	13.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	63	14	D	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
125	63	13	C	160	20.0	13.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	63	13	D	160	9.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	63	23	A	80	25.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0	5	1
125	63	24	B	160	10.0	4.5	0.0	0.0	2.6	0.0	0.0	0.0	1	1
125	63	24	A	160	19.0	1.4	0.0	0.0	0.0	8.0	0.0	0.0	1	1
125	63	23	D	80	7.0	5.4	0.0	0.0	1.0	0.0	0.0	0.0	5	1
125	63	24	C	160	5.0	1.4	0.0	0.0	0.8	0.0	1.0	0.2	1	1
125	63	24	D	160	5.0	1.9	0.0	0.0	0.0	3.7	2.0	0.6	1	1
125	62	18	A	170	0.0	0.0	0.1	5.9	0.0	0.0	0.0	0.0	6	1
125	62	17	B	50	0.0	0.0	0.1	42.6	0.0	0.0	0.0	0.0	6	1
125	62	18	C	160	0.0	0.0	0.1	23.4	0.0	0.0	1.0	0.3	1	1
125	62	18	D	130	0.0	0.0	0.1	28.6	0.0	0.0	0.0	0.0	6	1
125	62	19	B	160	5.0	6.4	0.1	2.2	0.0	0.0	1.0	0.3	1	1
125	62	19	A	140	1.0	0.2	0.1	55.6	0.0	0.0	0.0	0.0	6	1
125	62	20	B	10	0.0	0.0	0.1	13.9	0.0	0.0	0.0	0.0	6	1
125	62	19	C	160	1.0	0.8	0.0	0.0	0.0	0.0	1.0	0.2	1	1
125	62	19	D	160	0.0	0.0	0.1	9.0	0.0	0.0	1.0	0.2	1	1
125	62	20	C	110	0.0	0.0	0.1	65.9	8.0	0.0	0.0	0.0	6	1
125	63	25	B	160	0.0	0.0	0.0	0.0	0.0	6.2	1.0	0.3	1	1
125	63	25	A	160	2.0	2.0	0.0	0.0	0.0	5.9	1.0	0.3	1	1
125	63	26	D	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	63	25	C	160	2.0	3.5	0.0	0.0	0.6	0.0	0.0	0.0	1	1
125	63	25	D	160	3.0	4.6	0.0	0.0	3.2	0.0	0.0	0.0	1	1
125	63	35	B	40	3.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	5	1
125	63	35	A	160	6.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	63	36	B	160	4.0	31.0	0.0	0.0	0.0	0.0	1.0	0.2	1	1
125	63	36	A	160	2.0	9.0	0.0	0.0	0.0	0.0	1.0	0.3	1	1
125	63	35	C	80	32.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0	5	1
125	63	35	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	63	36	C	80	2.0	37.4	0.0	0.0	0.0	0.0	1.0	0.3	6	1
125	62	30	B	160	2.0	0.8	0.0	0.0	1.3	0.0	0.0	0.0	1	1
125	62	30	A	160	3.0	0.6	0.0	0.0	2.1	0.0	1.0	0.3	1	1
125	62	29	B	80	3.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	30	C	160	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	30	D	160	2.0	0.1	0.0	0.0	0.0	0.0	2.0	0.3	1	1
125	62	31	B	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	31	A	160	0.0	0.0	0.1	1.3	0.0	0.0	0.0	0.0	1	1
125	62	32	B	160	0.0	0.0	0.1	21.1	0.0	0.0	0.0	0.0	6	1
125	62	32	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
125	62	32	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
125	62	33	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	34	B	160	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	6	1
125	62	34	A	160	0.7	14.5	0.0	0.0	0.0	0.0	0.0	0.0	6	1
125	62	33	C	130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	33	D	130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	34	C	160	1.3	2.3	0.0	0.0	0.0	0.0	1.0	0.2	6	1
125	62	34	D	160	1.0	10.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
125	62	35	B	90	1.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	6	1
125	62	35	C	140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
125	62	35	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	64	1	A	160	8.0	1.6	0.0	0.0	0.0	2.7	0.0	0.0	7	1
124	64	1	C	160	22.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	64	1	D	160	46.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	64	12	B	160	32.0	17.3	0.0	0.0	1.9	0.0	0.0	0.0	7	1
124	64	12	A	160	12.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	64	12	C	160	12.0	10.7	0.0	0.0	1.9	0.0	1.0	0.3	7	1
124	64	12	D	160	20.0	9.9	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	6	B	160	4.0	2.7	0.0	0.0	0.0	5.9	0.0	0.0	6	1
124	63	6	A	160	6.0	9.8	0.0	0.0	0.0	11.5	0.0	0.0	1	1
124	63	7	B	160	14.0	22.7	0.0	0.0	0.0	0.0	1.0	0.3	7	1
124	63	8	A	160	10.0	4.3	0.0	0.0	0.0	15.8	0.0	0.0	6	1
124	63	8	D	160	10.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	4	A	160	1.0	9.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	3	B	120	10.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	3	A	30	16.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	4	D	160	2.0	2.2	0.0	0.0	0.0	5.1	0.0	0.0	1	1
124	63	3	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	3	D	160	8.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	9	B	30	1.0	6.4	0.0	0.0	0.0	4.2	0.0	0.0	6	1
124	63	9	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	9	D	80	1.0	1.6	0.0	0.0	0.0	9.8	0.0	0.0	7	1
124	63	2	D	40	2.0	4.8	0.0	0.0	3.0	3.8	0.0	0.0	5	1
124	63	[illegible]	A	90	7.0	1.7	0.0	0.0	0.0	3.0	0.0	0.0	1	1
124	63	2	C	80	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	8	D	160	3.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	6	C	80	4.0	2.7	0.0	0.0	0.0	6.7	0.0	0.0	1	1
124	62	5	B	150	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	1	1
124	62	4	B	160	17.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	4	A	160	7.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	3	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	3	A	160	1.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	4	C	160	2.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	4	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	3	C	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	3	D	160	4.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	10	B	160	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	10	A	160	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.4	1	1
124	62	9	C	160	1.0	1.4	0.0	0.0	0.0	0.0	1.0	0.3	1	1
124	62	10	C	160	1.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	10	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	2	B	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	2	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	62	11	B	80	1.0	5.2	1.0	3.2	0.0	0.0	0.0	0.0	6	1
124	62	11	C	160	1.0	3.4	1.0	21.8	0.0	0.0	0.0	0.0	6	1
124	64	23	B	140	9.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	17	B	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	17	A	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	17	C	80	3.0	4.9	0.0	0.0	0.0	2.9	0.0	0.0	1	1
124	63	17	D	160	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1	1
124	63	20	B	80	5.0	7.7	0.0	0.0	0.0	2.9	0.0	0.0	1	1
124	63	20	A	160	1.0	2.4	0.0	0.0	0.0	4.8	0.0	0.0	1	1
124	63	20	C	80	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	20	D	160	5.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	16	B	120	6.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	15	B	160	5.0	9.0	0.0	0.0	0.0	16.0	0.0	0.0	1	1
124	63	16	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	28	B	160	2.0	3.0	0.0	0.0	0.0	7.0	0.0	0.0	1	1
124	63	15	C	160	2.0	1.8	0.0	0.0	0.0	13.4	2.0	9.6	1	1
124	63	21	B	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	21	A	160	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	21	C	160	4.0	2.4	0.0	0.0	0.0	2.2	0.0	0.0	1	1
124	63	21	D	160	6.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	13	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	13	A	160	2.0	10.4	0.0	0.0	0.0	4.6	0.0	0.0	1	1
124	63	13	C	160	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	1	1
124	63	13	D	160	3.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	24	B	160	3.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	24	A	160	6.0	22.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	24	C	160	6.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	24	D	160	2.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	17	C	160	6.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	19	B	160	12.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	19	A	160	3.0	1.4	0.0	0.0	0.0	0.0	2.0	0.2	1	1
124	63	20	B	160	2.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	20	A	160	2.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	19	D	160	4.0	4.2	0.0	0.0	0.0	0.0	0.0	0.7	1	1
124	63	20	C	160	3.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	20	D	160	10.0	14.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	16	D	160	6.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	21	B	160	1.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	21	A	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	22	B	160	3.0	0.6	0.0	0.0	5.4	0.0	0.0	0.0	1	1
124	62	22	A	160	4.0	3.4	0.0	0.0	0.0	0.0	1.0	0.2	7	1
124	62	21	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	14	B	80	0.0	0.0	0.7	6.8	0.0	0.0	0.0	0.0	6	1
124	62	14	A	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	62	14	C	140	1.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	62	14	C	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
124	62	23	B	160	5.0	10.2	0.0	0.0	0.0	0.0	1.0	0.3	7	1
124	62	23	A	150	6.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	5	1
124	62	24	A	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	62	23	C	160	3.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	62	23	D	160	1.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	62	24	C	130	2.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	62	24	D	70	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	64	26	B	160	31.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	64	26	C	160	33.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	29	A	160	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	1	1
124	63	30	C	160	14.0	16.3	0.0	0.0	0.0	0.0	1.0	0.3	6	1
124	63	29	D	120	4.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	32	B	160	16.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	31	D	40	2.0	19.4	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	32	C	160	8.0	5.8	0.0	0.0	0.0	1.1	0.0	0.0	7	1
124	63	32	D	160	8.0	2.6	0.0	0.0	0.0	6.6	0.0	0.0	7	1
124	63	16	D	40	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	28	C	160	8.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	28	D	160	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	7	1
124	63	33	B	80	7.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	33	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	34	A	160	10.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	33	C	160	1.0	1.0	0.0	0.0	0.0	8.5	0.0	0.0	6	1
124	63	33	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	34	C	80	6.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	34	D	160	5.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	26	B	120	6.0	23.4	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	26	A	160	10.0	24.2	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	63	25	B	80	11.0	12.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	25	A	80	3.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	24	D	160	4.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	25	C	160	17.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	25	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	35	B	160	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	35	A	160	17.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	36	B	80	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	63	36	A	160	12.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1

28-20 A-4

124	63	35	C	160	7.0	10.1	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	36	C	80	4.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	63	36	D	80	5.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	29	B	160	7.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	29	A	160	3.0	9.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	30	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	30	D	160	8.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	29	D	160	4.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	31	B	160	16.0	11.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	31	C	160	28.0	17.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	32	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	28	B	160	9.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	28	A	160	2.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	27	B	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	27	A	80	2.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	28	C	160	6.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	28	D	160	2.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	27	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	33	B	120	5.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	34	B	160	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	62	34	A	150	25.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	62	33	C	160	3.0	9.4	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	62	33	D	160	6.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	7	1
124	62	34	D	110	2.0	9.9	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	62	25	A	100	1.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	26	D	160	3.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	6	1
124	62	25	D	160	1.0	6.4	0.0	0.0	0.0	0.0	1.0	0.3	5	1
124	62	30	B	50	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
124	62	30	C	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
123	63	6	A	80	4.0	20.5	0.0	0.0	0.0	8.0	0.0	0.0	6	1
123	63	5	B	160	3.0	5.4	0.0	0.0	0.0	8.0	0.0	0.0	1	1
123	63	5	A	120	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	7	1
123	63	6	C	80	7.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	6	D	160	2.0	16.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	5	D	160	3.0	0.2	0.0	0.0	0.0	10.6	0.0	0.0	7	1
123	63	5	C	160	4.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	8	B	160	7.0	1.9	0.0	0.0	0.0	8.0	0.0	0.0	1	1
123	63	8	A	160	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	1	1
123	63	7	D	160	0.0	0.0	0.0	0.0	0.0	10.2	0.0	0.0	5	1
123	63	8	C	160	2.0	2.6	0.0	0.0	0.0	6.2	0.0	0.0	1	1
123	63	8	D	160	2.0	2.9	0.0	0.0	8.0	0.0	0.0	0.0	1	1
123	63	4	A	160	17.0	9.4	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	3	A	160	5.0	2.7	0.0	0.0	0.0	0.0	1.0	0.4	6	1
123	63	4	C	160	1.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	3	C	160	8.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	3	D	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	1	1
123	63	9	C	160	16.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	10	[illegible]	160	0.0	0.0	0.0	0.0	[illegible]	0.0	0.0	0.0	7	1
123	63	10	D	160	8.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	2	B	160	9.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	2	A	160	7.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	2	C	160	17.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	2	D	160	10.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	1	C	160	11.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	1	D	160	15.0	4.5	0.0	0.0	8.0	0.0	0.0	0.0	1	1
123	63	11	B	80	8.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	11	A	160	4.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	11	C	160	2.0	0.8	0.0	0.0	0.0	0.0	1.0	0.7	1	1
123	62	6	A	160	3.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	5	B	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	6	C	160	5.0	3.4	0.0	0.0	7.5	0.0	0.0	0.0	1	1
123	62	6	D	160	3.0	1.9	0.0	0.0	0.0	0.0	1.0	0.6	1	1
123	62	5	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	5	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	62	7	B	160	9.0	3.0	0.0	0.0	1.0	0.0	0.0	0.0	1	1
123	62	7	A	160	3.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	8	B	160	10.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	8	A	160	5.0	1.6	0.0	0.0	0.0	0.0	1.0	0.3	1	1
123	62	7	C	160	4.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	7	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	8	C	160	3.0	35.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	8	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	4	B	160	3.0	4.0	0.0	0.0	0.0	0.0	1.0	0.3	1	1
123	62	4	A	160	2.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	4	C	160	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.3	1	1
123	62	4	D	160	10.0	7.4	0.0	0.0	0.0	0.0	1.0	0.2	1	1
123	62	3	C	150	1.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	3	D	90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	62	9	B	160	4.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	9	A	160	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	10	B	160	3.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	10	A	160	2.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	5	1
123	62	9	C	160	3.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	9	D	160	8.0	10.2	0.0	0.0	0.0	0.0	1.0	0.1	1	1
123	62	10	C	160	2.0	0.8	0.0	0.0	0.0	0.0	1.0	0.2	1	1
123	62	10	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	2	B	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
123	62	2	C	80	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.6	5	1
123	62	11	B	60	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.5	5	1
123	62	11	C	90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	63	18	A	160	0.0	0.0	0.0	0.0	0.0	10.2	0.0	0.0	5	1
123	63	17	B	160	5.0	6.4	0.0	0.0	0.0	6.2	0.0	0.0	1	1
123	63	17	A	160	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	17	C	20	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	17	D	20	7.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	19	C	4	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	1	1
123	63	20	C	160	11.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	20	D	80	1.0	0.1	0.0	0.0	0.0	2.2	0.0	0.0	1	1
123	63	16	A	160	13.0	17.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
123	63	15	A	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.	1	1

123	63	15	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	63	16	D	160	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	15	C	160	5.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	15	D	160	7.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	21	A	80	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	63	22	B	160	6.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	22	A	160	7.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	21	D	50	1.0	0.8	0.0	0.0	0.0	0.0	1.0	1.1	1	1
123	63	22	C	160	2.0	14.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	22	D	160	12.0	4.5	0.0	0.0	0.0	0.0	1.0	0.2	1	1
123	63	14	B	160	1.0	1.1	0.0	0.0	0.0	0.0	2.0	0.6	1	1
123	63	14	C	160	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	14	D	160	12.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	13	C	160	3.0	13.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	13	D	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	23	A	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	24	B	160	7.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	24	A	160	8.0	12.8	0.0	0.0	0.0	0.0	1.0	0.1	1	1
123	63	23	C	40	4.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	63	23	D	160	15.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	24	C	160	5.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	24	D	160	7.0	3.7	0.0	0.0	0.0	0.0	1.0	0.3	1	1
123	62	18	B	160	7.0	8.3	0.0	0.0	0.0	0.0	1.0	0.2	1	1
123	62	18	A	160	7.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	17	B	160	4.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	17	A	160	7.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	18	C	160	1.0	12.3	0.0	0.0	0.0	0.0	1.0	0.3	1	1
123	62	18	D	160	1.0	0.1	0.0	0.0	0.0	0.0	1.0	1.2	1	1
123	62	17	C	160	4.0	11.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	19	A	160	5.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	20	A	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	19	C	160	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	19	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	20	D	160	1.0	0.3	0.0	0.0	0.0	0.0	1.6	0.3	1	1
123	62	16	B	160	2.0	0.3	0.0	0.0	0.0	0.0	[illegible]	0.3	1	1
123	62	16	A	160	6.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	15	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	15	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	62	16	C	160	4.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	16	D	40	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	15	C	160	2.0	0.5	0.0	0.0	0.0	0.0	1.0	0.5	1	1
123	62	21	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	21	C	150	4.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	14	B	120	0.0	0.0	0.4	8.0	6.0	0.0	0.0	0.0	6	1
123	62	14	A	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	14	C	130	0.0	0.0	0.6	13.3	0.0	0.0	1.0	0.2	6	1
123	62	14	D	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	[illegible]
123	64	36	D	40	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1	7	1
123	63	30	B	160	9.0	12.8	0.0	0.0	0.0	0.0	[illegible]	0.0	1	[illegible]
123	63	29	A	160	0.0	0.0	0.0	0.0	9.4	0.0	1.0	0.2	1	1
123	63	30	C	140	7.0	4.6	0.0	0.0	0.0	0.0	[illegible]	0.0	5	1
123	63	29	C	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	29	D	160	2.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	31	B	80	1.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	31	A	160	6.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	63	32	B	160	3.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	32	A	160	5.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	31	C	80	4.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	31	D	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	63	32	C	160	2.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	28	A	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	27	A	160	2.0	5.4	0.0	0.0	3.5	0.0	0.0	0.0	1	1
123	63	28	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	33	B	160	2.0	0.3	0.0	0.0	2.4	0.0	1.0	0.3	1	1
123	63	33	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
123	63	34	B	80	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	33	C	160	1.0	1.3	0.0	0.0	2.2	0.0	0.0	0.0	1	1
122	63	34	B	160	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	33	D	160	1.0	7.2	0.0	0.0	2.9	0.0	0.0	0.0	1	1
123	63	26	B	160	5.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	25	B	160	3.0	15.7	0.0	0.0	4.3	0.0	0.0	0.0	6	1
123	63	25	A	160	6.0	1.3	0.0	0.0	0.5	0.0	0.0	0.0	1	1
123	63	26	C	160	3.0	0.6	0.0	0.0	0.0	0.0	1.0	0.2	1	1
123	63	26	D	160	9.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	25	C	160	4.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	25	D	160	1.0	0.2	0.0	0.0	4.6	0.0	0.0	0.0	7	1
123	63	35	A	80	23.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	36	B	80	7.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	36	A	80	5.0	[illegible]	0.0	0.0	0.0	0.0	0.0	0.0	6	1
123	63	35	C	160	4.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	63	35	D	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	36	C	160	4.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	63	36	D	120	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	30	B	160	3.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	7	1
123	62	30	A	160	4.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	31	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	32	B	160	5.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	31	C	160	1.0	0.3	0.0	0.0	0.0	0.0	1.0	0.2	6	1
123	62	32	C	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	32	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	28	B	160	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	28	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	33	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	34	B	160	1.0	3.8	0.0	0.0	5.4	0.0	0.0	0.0	6	1
123	62	33	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
123	62	33	D	160	0.0	0.0	0.0	0.0	[illegible]	0.0	0.0	0.0	5	1
123	62	34	C	110	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	6	1
123	62	34	D	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	64	10	B	80	6.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	64	10	A	160	1.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	6	1

28-20-A-5

122	64	10	C	40	2.0	10.1	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	64	10	D	160	1.0	18.1	0.0	0.0	0 0	0.0	0.0	0.0	1	1
122	64	8	A	160	3.0	14.7	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	64	8	D	120	17.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	7	C	160	15.0	1.3	0.0	0.0	0 0	1.3	0.0	0.0	6	1
122	64	7	D	160	1.0	0.1	0.0	0 0	0.0	11.2	0.0	0.0	7	1
122	64	12	B	80	6.0	0.8	0.0	0.0	0.0	0.0	1.0	0.2	5	1
122	64	12	C	30	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	7	1
122	64	12	D	120	4.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	63	6	B	160	9.0	4.5	0 0	0.0	0.0	0.0	0.0	0.0	6	1
122	63	5	B	160	4.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	6	C	160	8.0	0.8	0 0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	6	D	160	4.0	5.1	0.0	0.0	0.0	0.0	0 0	0.0	1	1
122	63	5	C	160	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	5	D	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	7	A	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	8	B	160	1.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	7	C	160	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	63	7	D	160	9.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	8	C	80	1.0	1.9	0.0	0.C	0.C	0.0	0.0	0.0	7	1
122	63	8	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	3	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	1	1
122	63	4	C	160	4.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	4	D	160	1.0	0.3	0.0	0 C	0.0	0.0	0.0	0.0	1	1
122	63	3	C	160	5.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	3	D	160	3.0	1.0	0.0	0 0	C.0	0.0	1.0	0.6	6	1
122	63	9	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	10	B	160	1.0	0.3	0 0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	10	A	160	0.C	0.0	0 0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	9	C	160	C.0	0 0	0 0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	9	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	10	C	160	3.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	10	D	160	5.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	63	2	B	160	9.0	1.1	0.0	0.0	0.0	0.0	0 0	0.0	1	1
122	63	2	A	160	2.0	0.3	0.0	0.0	0.0	0.0	0 0	0.0	1	1
122	63	1	B	160	1.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	2	C	160	1.0	0.2	0.0	0.0	0.0	0.0	0 0	0.0	7	1
122	63	2	D	160	11.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	1	C	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	11	B	160	5.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	11	A	80	2.0	1.3	0.0	0.0	0.0	0 0	0 0	0.0	7	1
122	63	12	B	160	6.0	2.2	0.0	0.0	0 0	0.0	0.0	0.0	1	1
122	63	12	A	160	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	11	C	160	7.0	5.3	0.0	0.C	0.0	0.0	0.0	0.0	1	1
122	63	11	D	160	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	12	C	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	12	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	6	B	160	4.0	0.8	0.0	0.C	0 0	0.0	0.0	0.0	1	1
122	62	6	A	160	1.0	0.2	0.0	0.0	0.0	0.0	1 0	0.2	6	1
122	62	5	B	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	5	A	160	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	5	C	160	1.0	1.3	0.0	0.0	0.0	0.0	1.0	0.3	1	1
122	62	5	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	7	A	160	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1	1
122	62	8	B	160	3.0	1.8	0 0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	8	A	160	3.0	2.9	0.0	0.0	0.C	0.0	0.0	0.0	1	1
122	62	7	C	160	1 0	0.2	0.0	0.0	18.9	0.0	0.0	0.0	1	1
122	62	7	D	160	1.0	1.6	0.0	0.C	0.0	0.0	0.0	0.0	6	1
122	62	8	C	160	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	8	D	160	2.0	2.2	0.0	0.C	0.C	0.0	1.0	0.3	1	1
122	62	4	A	120	1.C	3.5	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	62	3	B	20	0.0	0.0	0.0	0.C	0.0	0.0	0.0	0.0	6	1
122	62	9	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	9	A	130	3.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	62	10	B	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	62	9	C	160	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	9	D	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	64	15	B	80	0.0	0.0	0.1	9.6	0.0	0.0	0.0	0.0	6	1
122	64	15	A	160	8.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	64	15	C	80	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	64	22	B	160	1.0	6.1	0.0	0.0	0.0	9.6	0.0	0.0	5	1
122	64	21	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	64	22	D	160	5.0	9.6	0.0	0.0	9.6	0.0	C.0	0.0	6	1
122	64	13	A	160	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	23	B	160	3.0	2.9	0.0	0.0	0.0	10.9	0.0	0.0	6	1
122	64	24	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	64	24	A	160	1.0	0.5	0 0	0.0	0.0	0.0	C.0	0.0	1	1
122	64	23	C	160	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	1	1
122	64	24	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	24	D	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	18	B	160	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	1	1
122	63	18	A	160	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	1	1
122	63	17	B	160	1.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	63	17	A	160	4.0	1.0	0.0	0.0	0.0	0.0	0 0	0.0	1	1
122	63	18	C	160	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	1	1
122	63	17	D	160	4.0	5.0	0 0	0.0	0.0	C.0	0.0	0.0	1	1
122	63	19	B	160	0.0	0.0	0 0	0.0	0.0	C.0	0.0	0.0	1	1
122	63	20	A	160	0.0	0 0	0.0	0.0	0 0	0.0	0 0	0.0	5	1
122	63	19	D	160	4.0	1.0	0 0	0.0	C.0	0.0	0 0	0.0	1	1
122	63	20	C	160	3.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	20	D	80	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0	5	1
122	63	16	B	160	1.0	1.8	0 0	0 0	0.0	0.0	0.0	0.0	5	1
122	63	16	A	160	4.0	0.8	0 0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	15	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	15	A	160	1.0	0.6	0 0	0.0	0.0	0.0	0 0	0.0	7	1
122	63	16	C	160	7.0	2.6	0 0	0.0	4.4	0.0	1.0	0.3	5	1
122	63	16	D	160	4.0	0.6	0.0	0 0	0.0	0.0	0 0	0.0	5	1
122	63	15	C	160	0 0	0 0	0.0	0 0	0 0	0.0	0 0	0 0	5	1
122	63	15	D	160	0.0	0.0	0.0	0.0	4 3	10.4	0 0	0.0	6	1
122	63	21	B	160	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	63	22	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	22	A	160	0.C	0.0	0.0	0 0	0.0	15.4	0.0	0.0	6	1
122	63	22	C	160	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	1	1
122	63	22	D	160	0.0	0.0	0.0	0.0	0.0	19.0	0.0	0.0	6	1
122	63	14	B	160	0.0	0.0	0.0	0.0	0.0	8.2	0.0	0.0	1	1
122	63	13	A	80	4.0	3.2	0.0	0.0	0.0	9.6	0.0	0.0	6	1
122	63	14	C	160	0.0	0.0	0.0	0.0	0.0	2.9	1 0	0.3	1	1
122	63	13	D	160	0.0	0.0	0.0	0.0	15.7	0.0	0.0	0.0	1	1
122	63	23	B	120	0.0	0.0	0.0	0.0	C.0	0.0	0.0	0.0	1	1
122	63	24	A	160	0.0	0.0	0 0	0 0	0.0	0.0	0.0	0.0	1	1
122	63	24	C	160	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	18	A	160	C.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	17	B	160	1.0	27.8	0.0	0.0	0.0	0.0	1.0	0.2	1	1
122	62	17	A	160	4.0	1.1	0 0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	18	D	160	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	6	1
122	62	17	C	160	2.0	28.0	0.0	0.0	0.0	0.5	0.0	0.0	1	1
122	62	17	D	160	1.0	1.3	0.0	0 0	0.0	0.0	0.0	0.0	7	1
122	62	19	B	160	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	1	1
122	62	20	B	80	0.0	0.0	C.0	0 0	C.0	13.6	0.0	0.0	6	1
122	62	20	A	160	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	7	1
122	62	20	C	160	0.0	0.0	0.0	0.0	0.0	21.3	0.0	0.0	6	1
122	64	28	A	160	16.0	22.1	0 0	0.0	0.0	0.0	1.0	0.3	5	1
122	64	27	B	160	1.0	0.3	0.0	0.0	0.0	1.1	0.0	0.0	1	1
122	64	27	A	160	0.0	0.0	0.0	0.0	0.0	11.2	0.0	0.0	1	1
122	64	28	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	64	27	C	80	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	6	1
122	64	33	B	160	5.0	4.5	0.0	0.0	2.6	0.0	0.0	0.0	6	1
122	64	33	C	80	3.0	3.2	0 0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	33	D	70	1.0	6.4	0.0	0.0	1.1	0.0	0.0	0.0	6	1
122	64	34	C	160	0.0	0.0	0.0	0 0	1.4	1.9	0.0	0.0	1	1
122	64	26	B	160	0.0	C.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
122	64	26	A	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	25	B	160	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	25	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	64	26	D	160	2.0	3.0	0.0	0 0	0.0	0.0	0.0	0.0	1	1
122	64	25	D	160	3.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	35	B	160	2.0	0.2	C.0	0.0	0.0	1.9	0.0	0.0	1	1
122	64	35	A	160	7.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	36	B	120	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	35	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	36	C	160	4.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	64	30	A	80	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	7	1
122	64	29	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	64	29	A	80	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0	1	1
122	64	29	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	64	29	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	64	31	B	160	0.0	0.0	0 0	0.0	0.0	0.0	C.0	0.0	7	1
122	64	32	B	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	64	32	A	160	1.0	9.3	0.0	0.0	0.0	6.7	0.0	0.0	1	1
122	63	28	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	28	A	160	C.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	27	B	160	0.0	0.0	0.0	0 0	0.0	12.8	0.0	0.0	6	1
122	63	27	A	160	0.0	0.0	0.0	0.0	0 0	10.4	0.0	0.0	1	1
122	63	28	C	160	0.0	0 0	0.0	0 0	0.0	5.8	0.0	0.0	1	1
122	63	28	D	160	0.0	0.0	0.0	0.0	0.0	17.9	0.0	0.0	6	1
122	63	27	C	160	0.0	0.0	0.0	0 0	0.0	5.1	0.0	0.0	1	1
122	63	33	B	160	0.0	0.0	0.0	0.0	0.0	20.2	0.0	0.0	6	1
122	63	33	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	34	A	160	1.0	0 5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	26	B	160	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	26	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	25	B	160	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	26	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	25	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
122	63	36	B	40	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	36	A	40	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	1	1
122	63	36	C	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	63	36	D	80	0.0	0.0	0.2	9.9	0.0	0.0	0.0	0.0	1	1
122	62	30	B	80	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
122	62	30	A	80	1.0	0.3	0.0	0 0	0 0	0.0	0.0	0.0	1	1
122	62	30	C	160	4.0	1.3	0.0	0 0	0.0	0.0	0.0	0.0	1	1
122	62	30	D	150	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	62	29	C	140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	62	29	D	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	62	31	A	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	62	32	B	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
122	62	31	C	110	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	1	1
121	64	5	D	120	1.0	1.4	0.1	1.0	0.0	9.0	0.0	0.0	5	1
121	64	4	B	160	1.0	0.6	0.1	32.8	0.0	0.0	0.0	0.0	1	1
121	64	4	A	160	0.0	0.0	0.1	16.8	0.0	0.0	0.0	0.0	1	1
121	64	3	B	160	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	1	1
121	64	3	A	160	1.0	0.8	0.0	0.0	2.9	4.5	0.0	0.0	1	1
121	64	4	C	160	0 0	0.0	0.1	60 2	0.0	0.0	0.0	0.0	6	1
121	64	4	D	160	1.0	1.9	0.0	0 0	0.0	0.0	1.0	0.2	1	1
121	64	3	C	160	1.0	2.2	0.0	0.0	2.6	0.0	0.0	0.0	1	1
121	64	9	B	160	6.0	1.6	0.1	47 8	0.0	0.0	0.0	0.0	6	1
121	64	9	A	160	0.0	0.0	C.1	25.3	0.0	0.0	0.0	0.0	1	1
121	64	10	B	160	C.0	0.0	0.0	0.0	2 2	0.0	0.0	0.0	1	1
121	64	9	D	160	0 C	0.0	0 1	4.6	C.0	0.0	0.0	0.0	6	1
121	64	10	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
121	64	10	D	160	0.0	0.0	C.0	0 0	0 0	0.0	0.0	0.0	1	1
121	64	1	B	80	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	1	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	2	D	160	0.0	0.0	0 0	0 0	0.0	8.0	2.0	1.0	1	1
121	64	1	D	80	0.0	0.0	0 0	0.0	C.0	0.0	0.0	0.0	1	1
121	64	11	B	120	0.0	0.0	0.0	0.0	0 0	1.7	0.0	0.0	1	1
121	64	11	A	160	4.0	0.6	0.0	0.0	0 0	0.3	0.0	0.0	1	1
121	64	11	C	160	C 0	0.0	0.0	0 0	0.0	10 4	1 0	0.2	1	1
121	64	11	D	160	C.C	0.0	0.0	0 0	0.0	0.0	1.0	0.1	1	1
121	61	7	B	80	2 0	0 5	0 0	0 0	0 0	1.9	0.0	0.0	1	1

121	63	7	A	80	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0	1	1
121	63	7	C	160	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	1	1
121	63	7	D	80	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	1	1
121	63	8	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	8	D	160	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	1	1
121	63	4	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	3	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	3	C	160	2.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	2	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	2	A	160	5.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	7	1
121	63	1	B	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	1	A	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	1	D	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	12	A	30	0.8	2.2	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	11	D	160	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	18	C	160	1.0	2.4	0.0	0.0	0.0	5.3	1.0	0.3	7	1
121	64	18	D	160	0.0	0.0	0.5	10.2	0.0	3.4	1.0	0.3	7	1
121	64	19	B	160	2.0	14.0	0.0	0.0	0.0	0.0	0.0	0.3	7	1
121	64	19	A	160	5.0	17.3	0.0	0.0	0.0	3.4	0.0	0.0	7	1
121	64	16	A	40	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
121	64	15	B	160	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	5	1
121	64	16	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
121	64	15	D	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	21	D	160	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	22	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
121	63	18	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	18	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	17	B	160	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	18	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	18	D	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	19	B	160	3.0	0.5	0.0	0.0	0.0	0.0	1.0	0.1	1	1
121	63	19	A	160	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	20	B	160	2.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	20	A	160	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	19	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	16	B	120	6.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	16	C	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	21	B	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	21	D	80	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	13	D	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	23	A	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	7	1
121	63	24	B	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
121	63	24	A	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	23	C	160	4.0	0.6	0.0	0.0	2.9	0.0	0.0	0.0	6	1
121	63	23	D	160	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	1	1
121	63	24	C	130	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	7	1
121	63	24	D	70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	64	31	B	80	4.0	1.0	0.0	0.7	5.1	0.0	0.0	0.0	7	1
121	64	31	C	160	2.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	7	1
121	64	31	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
121	64	32	C	160	0.0	0.0	0.0	0.0	3.2	8.2	0.0	0.0	1	1
121	64	32	D	80	3.0	1.1	0.0	0.0	3.0	4.2	0.0	0.0	6	1
121	64	28	A	160	0.0	0.0	0.1	7.7	0.0	0.0	0.0	0.0	5	1
121	64	27	A	160	3.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	7	1
121	64	28	D	160	1.0	15.5	0.0	0.0	0.0	0.0	0.0	0.0	5	1
121	64	27	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	1
121	64	33	A	160	0.0	0.0	0.1	3.0	0.0	0.0	0.0	0.0	1	1
121	64	34	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	1
121	64	34	A	160	1.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	33	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	34	D	160	1.0	6.2	0.0	0.0	0.0	0.0	1.0	0.3	1	1
121	64	26	B	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	7	1
121	64	26	C	160	1.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	26	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	64	35	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	36	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	27	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	34	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	34	D	80	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	26	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	26	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1
121	63	25	B	90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	25	A	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	25	C	70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	25	D	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	1
121	63	35	D	60	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	6	1
120	65	1	A	80	0.0	0.0	0.3	51.[illegible]	0.0	0.0	0.0	0.0	6	3
120	65	12	A	160	0.0	0.0	0.4	91.7	0.0	0.0	0.0	0.0	6	3
120	65	12	D	160	0.0	0.0	0.1	24.2	0.0	0.0	0.0	0.0	1	3
120	64	6	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	5	B	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
120	64	6	C	160	1.0	16.3	0.0	0.0	1.4	0.0	0.0	0.0	1	3
120	64	6	D	160	4.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	5	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	5	D	160	2.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	7	B	160	8.0	12.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	8	A	160	1.0	1.0	0.1	12.5	0.0	0.0	0.0	0.0	1	3
120	64	7	C	160	7.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	8	D	160	0.0	0.0	0.1	41.6	0.0	0.0	0.0	0.0	1	3
120	64	4	B	80	0.0	0.0	0.1	67.4	0.0	0.0	0.0	0.0	6	3
120	64	4	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	3	A	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	4	C	120	0.0	0.0	0.1	55.7	0.0	0.0	1.1	0.3	6	3
120	64	4	D	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	3	C	120	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	9	B	160	1.0	85.4	0.0	0.0	0.0	0.0	7.0	0.4	6	3
120	64	10	A	160	2.0	0.8	0.0	0.0	0.0	0.0	1.0	1.4	1	3
120	64	9	C	160	1.0	7.4	0.0	0.0	0.0	0.0	1.0	0.2	6	3
120	64	10	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	2	B	40	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1	3
120	64	2	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	2	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	1	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	1	D	160	1.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	11	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	11	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	11	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	5	B	90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	6	C	150	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	5	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	7	A	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	8	D	160	1.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	4	B	80	3.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	5	3
120	63	3	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	4	C	80	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	4	A	40	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	7	3
120	63	4	D	160	4.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	5	3
120	63	3	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	3	D	160	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	6	2
120	63	9	B	160	10.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	10	B	140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	10	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	63	9	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	10	D	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.2	1	2
120	63	2	B	160	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	6	2
120	63	2	C	160	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0	6	2
120	63	11	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	63	12	D	160	7.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
120	62	4	B	160	2.0	5.3	0.0	0.0	0.0	1.0	0.0	0.0	1	2
120	62	4	A	160	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0	6	2
120	62	3	B	160	1.0	1.0	0.0	0.0	2.1	0.0	0.0	0.0	1	2
120	62	3	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	4	C	160	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	1	2
120	62	4	D	160	0.0	0.0	0.0	0.0	1.0	9.4	0.0	0.0	5	2
120	62	3	C	160	2.0	0.6	0.0	0.0	2.6	0.0	0.0	0.0	1	2
120	62	3	D	160	9.0	1.9	0.0	0.0	1.3	0.0	0.0	0.0	1	2
120	62	9	B	160	1.0	4.8	0.0	0.0	0.0	7.8	0.0	0.0	6	2
120	62	9	A	160	1.0	0.6	0.0	0.0	0.0	1.0	0.0	0.0	1	2
120	62	10	B	160	3.0	2.9	0.0	0.0	0.0	0.0	1.0	0.2	1	2
120	62	10	A	160	3.0	0.8	0.0	0.0	1.1	0.0	0.0	0.0	1	2
120	62	9	C	160	1.0	5.1	0.0	0.0	0.0	0.0	1.0	0.2	1	2
120	62	9	D	160	2.0	2.9	0.0	0.0	1.9	0.0	1.0	0.2	1	2
120	62	10	C	160	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	10	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	5	D	160	1.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	7	A	160	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1	2
120	62	8	B	160	1.0	0.3	0.0	0.0	0.2	0.0	0.0	0.0	1	2
120	62	8	A	160	4.0	0.8	0.0	0.0	1.0	0.0	0.0	0.0	1	2
120	62	7	D	160	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1	2
120	62	8	C	160	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1	2
120	62	8	D	160	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	1	2
120	62	1	B	40	2.0	0.6	0.0	0.0	0.0	6.4	0.0	0.0	1	2
120	62	1	A	80	3.0	0.3	0.0	0.0	0.0	2.6	0.0	0.0	1	2
120	62	1	C	160	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	1	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	11	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	11	A	80	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	12	A	160	0.0	0.0	0.0	0.0	0.0	4.5	1.0	0.3	1	2
120	62	11	D	160	1.0	2.1	0.0	0.0	0.0	0.0	1.0	0.2	1	2
120	62	12	C	160	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	1	2
120	62	12	D	160	1.0	0.8	0.0	0.0	0.0	0.0	1.0	0.3	1	2
120	61	5	B	160	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	6	2
120	61	4	B	160	2.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	4	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	3	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	3	A	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	4	C	120	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	9	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	2	B	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	2	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	1	A	80	3.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	65	13	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	65	11	C	80	0.0	0.0	0.2	2.7	0.0	0.0	0.0	0.0	6	3
120	65	13	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	65	24	A	160	0.0	0.0	0.1	2.2	0.0	0.0	0.0	0.0	1	3
120	65	24	B	80	0.0	0.0	0.4	6.7	0.0	0.0	1.0	0.3	6	3
120	65	24	C	80	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.5	6	3
120	65	24	D	160	0.0	0.0	0.3	11.4	0.0	0.0	0.0	0.0	1	3
120	64	18	B	160	7.0	10.9	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	18	A	160	2.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	17	A	160	2.0	0.5	0.1	42.1	0.0	0.0	0.0	0.0	6	3
120	64	18	C	160	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	18	D	160	16.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	17	D	160	0.0	0.0	0.1	56.5	0.0	0.0	0.0	0.0	6	3
120	64	19	B	160	1.0	7.7	0.1	0.5	0.0	0.0	0.0	0.0	1	3
120	64	19	A	160	3.0	4.0	0.4	8.5	0.0	0.0	1.0	0.2	1	3
120	64	19	C	160	1.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	5	3
120	64	19	D	160	0.0	0.0	0.5	16.1	0.0	0.0	0.0	0.0	1	3
120	64	20	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	16	B	160	0.0	0.0	0.1	52.6	0.0	0.0	2.0	0.4	6	3
120	64	15	B	160	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	15	A	160	1.0	13.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	16	C	160	0.0	0.0	0.1	60.[illegible]	0.0	0.0	1.0	0.2	6	3
120	64	16	D	160	4.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	15	C	160	4.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	15	D	160	1.0	3.4	0.0	0.0	0.0	0.0	1.0	9.0	1	3
120	64	21	B	160	0.0	0.0	0.1	91.5	0.0	0.0	0.0	0.0	6	3
120	64	21	A	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	22	B	160	4.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	22	A	160	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3

120	64	21	D	160	0.0	0.0	0.1	39.2	0.0	0.0	0.0	0 0	1	3
120	64	14	B	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	14	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	13	B	160	3.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	14	C	160	4.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	14	D	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	13	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	23	B	160	1.0	1.3	0.0	0.0	0.0	0.0	0 0	0.0	1	3
120	64	23	A	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	24	B	160	0.0	0.0	0.0	0.0	0 0	0.0	0 0	0.0	1	3
120	64	24	A	160	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	23	C	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	23	D	160	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	1	3
120	64	24	D	160	2.0	0.6	0 0	0.0	0.0	0.0	0.0	0.0	5	3
120	63	17	B	160	1.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	18	D	160	1.0	32.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	17	C	160	1.0	9.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	17	D	160	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	1	3
120	63	20	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	19	C	160	1.0	36.8	0.0	0.0	0.0	0.0	1.0	0.3	1	3
120	63	20	C	160	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	16	B	40	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	15	A	160	3 0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	7	2
120	63	16	C	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	16	D	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	15	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	63	14	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	2
120	63	13	A	160	4.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	63	14	D	160	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0 0	1	2
120	63	13	C	160	0 0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	1	2
120	63	13	D	160	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	6	2
120	63	23	A	160	1.0	0.3	0.0	0.0	0.0	2.2	0.0	0.0	6	2
120	63	24	B	160	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	6	2
120	63	23	D	160	1.0	4.2	0.0	0.0	0.0	15.0	0.0	0.0	6	2
120	63	24	C	160	1.0	2.6	0.0	0.0	0 0	1.6	0.0	0.0	6	2
120	62	18	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	18	A	160	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0	6	2
120	62	17	B	160	1.0	0.6	0.0	0.0	0.0	8.0	1.0	0.2	6	2
120	62	17	A	160	0.0	0.0	0.0	0.0	0.0	1.8	1.0	0.2	6	2
120	62	18	C	160	3.0	1.4	0.0	0.0	0.0	6.7	0.0	0.0	6	2
120	62	18	D	160	0.0	0.0	0.0	0 0	8.0	10.4	0.0	0.0	6	2
120	62	17	C	160	3.0	4.0	0.0	0 0	0.0	0.0	0.0	0.0	1	2
120	62	17	D	160	1.0	9.1	0 0	0.0	0.0	0.0	1.0	0.2	1	2
120	62	19	A	160	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	20	B	160	5.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	20	A	160	1.0	0.5	0.0	0 0	0.0	0.0	0.0	0.0	1	2
120	62	19	C	160	6.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	19	D	160	4.0	4.3	0.0	0.0	0.0	0.0	0 0	0.0	6	2
120	62	20	C	160	4.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	20	D	160	2.0	4.2	0.0	0.0	0.0	0.0	1.0	0.3	1	2
120	62	16	B	160	1.0	1.0	0.0	0.0	4.6	0.0	1.0	0.3	6	2
120	62	16	A	160	3.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	15	B	160	3.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	15	A	160	3.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	16	C	160	2.0	1.1	0.0	0.0	1.6	0.0	0.0	0.0	1	2
120	62	16	D	160	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	1	2
120	62	15	C	120	0.0	0.0	0.0	0 0	0 0	0.0	0.0	0.0	1	2
120	62	15	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	22	B	160	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	1	2
120	62	22	A	160	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	5	2
120	62	22	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	22	D	160	2.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	14	B	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	14	A	160	11.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	13	B	160	1.0	1.4	0.0	0.0	0.0	13.4	0.0	0.0	1	2
120	62	13	A	160	3.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	14	C	160	4.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	5	2
120	62	14	D	160	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	13	C	160	0.0	0.0	0.0	0.0	0 0	11.2	0.0	0.0	1	2
120	62	13	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	23	B	160	6.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	23	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	24	B	160	1.0	0.5	0.0	0.0	0.0	6.2	0.0	0.0	1	2
120	62	24	A	160	1.0	2.7	0.0	0.0	0.0	0.0	0 0	0.0	1	2
120	62	23	D	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0 0	1	2
120	62	24	C	160	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	1	2
120	62	24	D	160	3.0	0.6	0.0	0.0	0.0	3.5	0.0	0.0	1	2
120	61	18	B	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	18	A	120	0 0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	17	B	120	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	17	A	160	1.0	1.6	0.0	0.0	0.0	0.0	1.0	0.4	1	2
120	61	18	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	19	B	160	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	20	B	10	2.0	2.6	0.0	0.0	0.0	0.0	1.0	0.4	6	2
120	61	20	A	140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
120	61	19	C	160	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	19	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	20	C	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.2	1	2
120	61	20	D	160	3.0	4.2	0.0	0 0	0.0	0.0	1.0	0.3	1	2
120	61	16	B	40	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	6	2
120	65	25	B	80	2.0	5.6	0.0	0.0	0.0	0.0	1.0	0.2	6	3
120	65	25	A	160	6.0	3.9	0.0	0.0	0 0	0.0	0.0	0.0	6	3
120	65	25	C	80	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	6	3
120	65	25	D	120	8.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	6	3
120	65	35	A	80	4.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	6	3
120	65	36	B	1.0	29 0	4.5	0.0	0.0	0 0	0.0	1 0	0.1	6	3
120	65	16	A	80	6.0	1.1	0 0	0.0	0.0	0.0	0.0	0.0	1	3
120	65	15	D	160	11 0	31.7	0.0	0.0	0 0	0 0	0.0	0.0	6	3
120	65	16	C	160	14 0	1 7	0 0	0.0	0.0	0 0	0.0	0 0	6	3
120	64	30	B	160	1.0	42.7	0 0	0.0	0.0	0.0	0 0	0.0	1	3
120	64	30	A	160	5 0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	29	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	1	3
120	64	30	C	160	20.0	28.3	0.0	0.0	0.0	0.0	1.0	0.2	5	3
120	64	30	D	160	1.0	42.2	0.0	0.0	0.0	0.0	2.0	0.3	1	3
120	64	29	C	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	29	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	31	B	160	2.0	33.4	0.0	0.0	0.0	0.0	1.0	0.1	5	3
120	64	31	A	160	3.0	55.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	32	B	160	7.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	32	A	160	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	31	D	160	3.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	32	C	160	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	32	D	160	1.0	0 3	0.1	34.9	0.0	0 0	0.0	0.0	1	3
120	64	28	B	160	0.0	0.0	0.1	77.1	0.0	0.0	0.0	0.0	1	3
120	64	27	B	160	4.0	0.8	0.0	0.0	0 0	0.0	1.0	0.3	1	3
120	64	27	A	160	1.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	28	C	160	0.0	0 0	0.1	24.2	0.0	0.0	1.0	0.1	1	3
120	64	28	D	160	0.0	0.0	0.1	37.0	0.0	0.0	0.0	0.0	1	3
120	64	33	B	40	0.0	0.0	0.1	34.6	0.0	0.0	1.0	0.1	6	3
120	64	33	A	160	0.0	0.0	0.1	31.5	0.0	0.0	0.0	0.0	1	3
120	64	34	A	160	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	34	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	26	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	25	B	160	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	26	C	160	0.0	0.0	0.0	0.0	7.4	0.0	1.0	2.3	1	3
120	64	26	D	160	0 0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1	3
120	64	25	C	160	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	35	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	35	A	160	0 0	0.0	0.0	0.0	15.4	0.0	0.0	0.0	1	3
120	64	33	C	80	0.0	0.0	0.1	48.6	0.0	0.0	0.0	0.0	6	3
120	64	36	B	160	2.0	0.5	0.5	27.0	0.0	0.0	0.0	0.0	1	3
120	64	36	A	160	1.0	0.3	0.5	29.8	0.0	0.0	1.0	0.3	1	3
120	64	35	C	160	0.0	0.0	0.0	0.0	0 0	0.0	1.0	2.2	1	3
120	64	35	D	160	0.0	0.0	0.0	0 0	13.0	0.0	1.0	0.5	1	3
120	64	36	C	120	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	64	36	D	160	0.0	0.0	0.0	0 0	0.0	0.0	2.0	0.5	1	3
120	63	30	B	160	3.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	30	A	80	1.0	2.4	0.0	0.0	0.0	0.0	0.0	0 0	1	3
120	63	29	B	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	30	C	80	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	30	D	160	5.0	1.8	0.0	0 0	0.0	0 0	0.0	0.0	1	3
120	63	31	A	160	2 0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	32	B	160	2.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	31	D	160	3.0	1.0	0.0	0 0	0.0	0.0	0.0	0.0	1	3
120	63	32	C	160	3.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	3
120	63	27	C	160	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
120	63	27	D	160	2.0	0.5	0.0	0.0	0.0	0 0	0.0	0.0	6	3
120	63	34	A	160	4.0	1.4	0.0	0.0	0.0	0 0	0.0	0.0	1	2
120	63	25	A	160	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	1	2
120	63	26	C	160	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	63	25	C	160	0 0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1	2
120	63	25	D	160	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	1	2
120	63	35	B	160	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	0.0	1	2
120	63	35	A	160	0.0	0.0	0.0	0.0	0.8	0 0	0.0	0.0	1	2
120	63	36	B	160	2.0	2.9	0 0	0 0	0.0	0.0	0.0	0.0	1	2
120	63	36	A	160	0 0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	1	2
120	63	35	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	63	36	C	80	5.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
120	63	36	D	40	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	30	B	160	4.0	1.1	0.0	0.0	-0.0	0.0	0.0	0.0	1	2
120	62	30	A	160	5.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	29	B	160	2.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	29	A	120	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	30	C	160	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	30	D	160	2.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	29	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	29	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	31	B	160	1.0	1.6	0.0	0.0	4.2	0.0	0.0	0.0	1	2
120	62	31	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	31	C	160	0.0	0.0	0.0	0 0	3.8	0.0	1.0	0.2	1	2
120	62	31	D	160	1 0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	28	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	1	2
120	62	27	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	27	A	160	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	5	2
120	62	27	D	160	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	34	B	120	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.2	1	2
120	62	34	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
120	62	34	C	160	7.0	3.5	0 0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	26	A	160	1.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	25	B	160	1.0	0.3	0.0	0.0	0 0	2.6	0.0	0.0	1	2
120	62	25	A	160	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	1	2
120	62	26	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
120	62	26	D	160	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	25	C	160	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	1	2
120	62	25	D	160	0.0	0.0	0 0	0.0	0.0	0 0	0.0	0.0	1	2
120	62	35	A	160	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	36	B	160	0 0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	1	2
120	62	36	A	160	1 0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	62	35	C	160	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	1	2
120	62	35	D	160	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	1	2
120	62	36	C	160	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	1	2
120	62	36	D	160	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	1	2
120	61	30	B	160	4.0	1.1	0.0	0.0	0.0	0.0	0 0	0 0	1	2
120	61	30	A	160	4 0	1.0	0 0	0.0	0.0	0 0	0.0	0 0	1	2
120	61	29	B	160	7 0	1.6	0.0	0.0	0 0	0 0	0.0	0.0	1	2
120	61	29	A	160	27 0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	30	C	160	1 0	0 6	0.0	0 0	0.0	0.0	0.0	0.0	1	2
120	61	29	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	31	B	160	1.0	1.6	0 0	0.0	0.0	0.0	0.0	0 0	6	2
120	61	31	A	160	0 0	0.0	0.0	0 0	0.0	0.0	0.0	0.0	1	2

120	61	31	C	160	2.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	31	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
120	61	28	B	160	4.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	5	2
120	61	28	C	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	65	3	D	160	1.0	0.3	0.0	0.0	0.0	0.0	1.0	0.3	7	3
119	65	11	B	160	1.0	0.3	0.0	0.0	0.0	10.2	0.0	0.0	7	3
119	65	12	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	65	12	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	3
119	64	6	B	80	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6	3
119	64	5	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	5	D	160	1.0	0.2	0.1	96.8	0.0	0.0	1.0	0.2	6	3
119	64	5	C	160	0.0	0.0	0.1	2.7	0.0	0.0	0.0	0.0	1	3
119	64	7	B	80	0.0	0.0	0.1	12.6	0.0	4.5	0.0	0.0	6	3
119	64	6	C	160	0.0	0.0	0.5	62.6	0.0	0.0	0.0	0.0	6	3
119	64	5	A	160	0.0	0.0	0.1	70.4	0.0	0.0	1.0	0.2	6	3
119	64	6	D	160	8.0	2.9	0.1	62.7	0.0	0.0	0.0	0.0	1	3
119	64	7	A	160	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5	3
119	64	8	B	160	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	8	A	160	2.0	0.3	1.0	42.9	0.0	0.0	1.0	0.3	1	3
119	64	7	C	160	0.0	0.0	0.0	0.0	0.0	17.3	0.0	0.0	1	3
119	64	7	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	8	C	160	3.0	0.2	0.1	11.5	0.0	0.0	0.0	0.0	1	3
119	64	8	D	160	3.0	0.3	0.1	19.5	0.0	0.0	1.0	0.3	1	3
119	64	3	A	160	1.0	8.2	0.0	0.0	0.0	0.0	1.0	0.8	1	3
119	64	4	C	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	9	B	160	2.0	0.5	0.0	0.0	0.0	0.0	2.0	0.5	1	3
119	64	9	C	160	3.0	13.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	10	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	2	B	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1	3
119	64	11	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	11	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	3
119	64	11	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	11	D	160	4.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5	3
119	64	12	C	160	1.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	6	B	160	11.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	6	A	160	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	5	B	160	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	5	A	160	6.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	7	3
119	63	5	C	160	3.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	7	C	160	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1	3
119	63	8	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	8	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	10	A	120	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1	2
119	63	9	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	9	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
119	63	10	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	10	D	80	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	2	D	80	4.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	12	A	160	4.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	6	A	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	5	B	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	5	A	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	6	D	160	1.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	5	C	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	5	D	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	7	B	160	5.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	8	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	8	A	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	7	C	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	8	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	8	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	4	A	160	0.0	0.0	0.0	0.0	5.8	0.0	0.0	0.0	5	2
119	62	3	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	4	C	160	1.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	4	D	160	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	1	2
119	62	3	C	160	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1	2
119	62	3	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	9	B	160	1.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	9	A	160	18.0	5.4	0.0	0.0	0.0	0.0	1.0	0.2	5	2
119	62	9	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	10	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	2	B	160	5.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	2	A	160	0.0	0.0	0.0	0.0	0.0	3.2	1.0	0.2	1	2
119	62	1	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	2	D	160	1.0	0.3	0.0	0.0	0.0	2.4	0.0	0.0	1	2
119	62	1	C	160	4.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	1	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	12	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	11	C	160	1.0	0.3	0.0	0.0	0.0	4.2	0.0	0.0	1	2
119	62	12	D	160	2.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	6	B	160	2.0	0.5	0.0	0.0	0.0	0.0	3.0	1.2	1	2
119	61	6	A	160	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	6	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	6	D	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	5	C	80	11.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	7	B	160	1.0	2.9	0.0	0.0	0.0	0.0	2.0	0.5	1	2
119	61	7	A	80	3.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	7	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	7	D	80	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	8	C	80	6.0	6.4	0.0	0.0	0.0	0.0	0.7	0.2	1	2
119	65	13	A	80	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	6	3
119	65	24	A	80	3.0	0.8	0.0	0.0	0.0	5.8	0.0	0.0	6	3
119	65	24	C	160	7.0	[illegible]	0.0	0.0	0.0	0.0	0.0	0.0	6	3
119	65	24	D	80	8.0	2	0.0	0.0	0.0	5.6	0.0	0.0	6	3
119	64	18	B	160	0.0	0.0	0.0	0.0	0.0	15.2	1.0	0.3	6	3
119	64	18	A	160	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	18	C	80	1.0	0.3	0.0	0.0	0.0	6.9	1.0	0.3	1	3
119	64	18	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	17	C	160	0.0	0.0	0.0	0.0	0.0	11.5	0.0	0.0	1	3
119	64	19	B	160	24.0	4.5	0.0	0.0	0.0	17.1	0.0	0.0	6	3
119	64	19	A	160	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	1	3
119	64	20	B	160	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	1	3
119	64	20	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	19	C	160	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	1	3
119	64	19	D	160	2.0	0.3	0.0	0.0	0.0	9.0	0.0	0.0	1	3
119	64	20	C	160	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	20	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	15	C	160	4.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	21	B	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	21	A	160	3.0	23.4	0.0	0.0	0.0	0.0	0.0	0.0	5	3
119	64	22	B	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	21	C	160	5.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	21	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	22	D	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	13	B	160	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	1	3
119	64	13	A	160	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	13	D	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	1	3
119	64	23	B	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	5	3
119	64	23	A	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	24	B	160	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	24	A	160	2.0	1.1	0.0	0.0	0.0	0.0	2.0	0.5	1	3
119	64	23	C	160	2.0	1.3	0.0	0.0	0.0	0.0	1.0	0.8	5	3
119	64	23	D	160	2.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	24	C	160	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	5	3
119	64	24	D	160	6.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	13	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
119	63	18	B	160	0.0	0.0	0.0	0.0	0.0	3.8	1.0	0.3	1	3
119	63	18	A	160	4.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	17	C	160	2.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	18	C	160	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	1	3
119	63	18	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	19	B	160	2.0	1.9	0.0	0.0	0.0	3.0	1.0	0.3	1	3
119	63	19	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	63	19	C	160	2.0	0.3	0.0	0.0	0.0	3.0	0.0	0.0	1	3
119	63	16	B	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
119	63	16	A	160	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	15	B	160	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	1	2
119	63	16	D	80	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	15	C	160	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	1	2
119	63	15	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	21	D	160	7.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	22	D	160	3.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	63	13	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	63	14	C	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	23	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	63	23	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	63	24	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	17	B	160	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	17	A	160	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	17	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	62	20	B	160	4.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	16	B	80	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	5	2
119	62	16	A	160	1.0	0.5	0.0	0.0	4.3	0.0	0.0	0.0	1	2
119	62	15	B	160	1.0	0.8	0.0	0.0	2.4	0.0	0.0	0.0	1	2
119	62	16	C	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	16	D	160	1.0	0.3	0.0	0.0	2.7	0.0	1.0	0.2	1	2
119	62	21	B	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	21	A	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	5	2
119	62	21	C	160	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	14	B	160	1.0	4.0	0.0	0.0	0.0	0.0	1.0	0.3	1	2
119	62	24	B	160	22.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	62	24	A	160	2.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	61	18	A	160	6.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	18	D	160	4.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	61	19	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	19	A	160	1.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	19	D	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	5	2
119	61	20	C	120	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	61	20	D	80	1.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
119	65	25	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
119	65	25	C	80	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6	3
119	65	36	A	160	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	6	3
119	65	36	D	160	4.0	2.4	0.0	0.0	0.0	1.0	2.0	0.5	6	3
119	64	30	B	160	3.0	0.6	0.0	0.0	0.0	3.7	1.0	0.3	1	3
119	64	30	A	160	0.0	0.0	0.0	0.0	0.0	8.6	0.0	0.0	1	3
119	64	29	B	160	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	30	C	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	30	D	160	0.0	0.0	0.0	0.0	0.0	8.3	1.0	0.3	1	3
119	64	29	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	29	D	160	3.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	31	B	160	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	5	3
119	64	31	A	160	2.0	0.8	0.0	0.0	0.0	6.4	0.0	0.0	1	3
119	64	32	A	160	8.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	31	C	160	0.0	0.0	0.0	0.0	0.0	21.0	0.0	0.0	6	3
119	64	31	D	160	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	32	C	160	6.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	32	D	160	4.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	28	B	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	28	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	27	A	160	5.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	5	3
119	64	28	C	160	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1	3
119	64	28	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	27	C	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	27	D	160	2.0	1.1	0.0	0.0	0.0	0.0	1.0	0.2	1	3
119	64	33	B	160	1.0	1.1	0.0	0.0	1.5	0.0	0.0	0.0	1	3
119	64	33	A	160	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	1	3
119	64	34	B	160	1.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	34	A	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
119	64	33	C	160	1.0	1.6	0.0	0.0	1.4	0.0	0.0	0.0	1	3
119	64	33	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3

28-20-A-9

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119	64	34	C	160	2.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	64	34	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	64	26	B	160	3.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	64	26	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 3
119	64	25	B	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	5 3
119	64	25	A	160	1.0	1.9	0.0	0.0	3.0	0.0	0.0	0.0	1 3
119	64	26	C	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4	5 3
119	64	26	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	64	25	C	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	5 3
119	64	25	D	160	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	6 3
119	64	35	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	64	35	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	64	36	B	160	6.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	64	36	A	120	0.0	0.0	0.0	0.0	2.1	0.0	1.0	0.3	1 3
119	64	35	C	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5 3
119	64	35	D	160	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1 3
119	64	36	C	140	3.0	1.8	0.0	0.0	2.9	0.0	0.0	0.0	1 3
119	63	30	C	160	8.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	63	31	B	160	4.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	5 3
119	63	32	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6 3
119	63	32	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
119	63	32	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6 3
119	63	28	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6 2
119	63	27	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	28	C	80	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	6 2
119	63	28	D	160	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	27	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	27	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	33	B	160	2.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	6 2
119	63	33	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	34	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	33	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	33	D	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	26	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	26	C	150	5.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	63	26	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	35	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	63	35	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	63	36	C	160	5.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	63	36	D	160	3.0	19.2	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	62	29	B	160	4.0	2.6	0.0	0.0	0.0	0.0	1.0	0.5	1 2
119	62	30	C	80	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1 2
119	62	30	D	80	0.0	0.0	0.0	0.0	4.2	0.0	2.0	0.6	1 2
119	62	29	C	160	2.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	62	29	D	160	1.0	95.7	0.0	0.0	0.0	0.0	1.0	0.3	1 2
119	62	31	A	160	2.0	1.0	0.0	0.0	1.3	0.0	0.0	0.0	5 2
119	62	32	B	160	2.0	0.6	0.3	0.3	2.4	0.0	0.0	0.0	5 2
119	62	31	D	160	1.0	12.5	0.0	0.0	0.0	0.0	1.0	0.3	5 2
119	62	32	C	160	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	1 2
119	62	28	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	62	28	D	160	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	1 2
119	62	27	C	160	2.0	1.0	0.0	0.0	0.3	0.0	0.0	0.0	1 2
119	62	33	B	160	6.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	62	33	A	160	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	1 2
119	62	34	B	160	1.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	62	34	A	160	1.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	62	33	C	160	1.0	0.6	0.0	0.0	3.2	0.0	0.0	0.0	1 2
119	62	33	D	160	0.0	0.0	0.0	0.0	4.5	0.0	1.0	0.2	1 2
119	62	25	D	160	5.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	62	36	B	40	5.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	62	35	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	61	30	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	61	29	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	61	29	A	160	1.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	61	29	C	160	1.0	3.4	0.0	0.0	0.0	0.0	1.0	0.1	5 2
119	61	29	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	61	32	A	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	5 2
119	61	31	C	160	5.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	61	28	B	80	6.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	1 2
119	61	28	C	80	2.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	64	6	B	80	0.0	0.0	0.0	0.0	0.0	9.6	1.0	0.1	6 3
118	64	6	A	160	8.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	5	B	160	1.0	0.3	0.7	3.0	0.0	0.0	0.0	0.0	1 3
118	64	5	A	160	0.0	0.0	0.1	5.4	0.0	0.0	0.0	0.0	1 3
118	64	6	C	80	2.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	6	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	5	C	160	0.0	0.0	0.1	1.0	0.0	0.0	0.0	0.0	1 3
118	64	5	D	160	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.0	1 3
118	64	7	B	80	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	1 3
118	64	7	A	160	3.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	8	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	7	D	160	8.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	8	C	160	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	4	B	160	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	1 3
118	64	4	A	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	3	B	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	3	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	4	D	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	3	C	160	1.0	13.0	0.0	0.0	0.0	0.0	1.0	0.3	1 3
118	64	3	D	160	1.0	13.6	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	10	B	160	1.0	42.1	0.0	0.0	0.0	0.0	1.0	0.3	1 3
118	64	10	A	160	2.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	5 3
118	64	10	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	2	B	160	5.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	2	A	160	7.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	2	C	160	4.0	4.3	0.0	0.0	1.4	0.0	0.0	0.0	1 3
118	64	2	D	160	2.0	0.6	0.0	0.0	1.4	0.0	0.0	0.0	1 1
118	64	1	C	160	3.0	0.4	0.0	0.0	0.0	1.0	0.0	0.0	1 3
118	64	1	D	160	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1 3
118	64	11	B	160	1.0	1.6	0.0	0.0	1.1	0.0	0.0	0.0	1 3
118	64	11	A	160	6.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	5 3
118	64	12	A	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1	1 3
118	64	11	C	160	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	11	D	160	3.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	12	C	160	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	1 3
118	64	12	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	63	6	B	160	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	63	6	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	63	5	B	160	4.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	63	5	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6 2
118	63	6	C	160	2.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	63	5	C	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	6 3
118	63	5	D	160	2.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	6 2
118	63	7	B	160	3.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	63	8	B	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	6 2
118	63	8	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	7	C	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	63	7	D	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	8	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	8	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	4	B	160	1.0	0.8	0.0	0.0	0.0	0.0	1.0	0.4	1 2
118	63	4	A	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	6 2
118	63	3	B	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	3	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	3	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	9	A	160	0.0	0.0	0.0	0.0	1.8	0.0	1.0	0.3	1 2
118	63	10	B	160	3.0	0.6	0.0	0.0	0.3	0.0	0.0	0.0	1 2
118	63	10	A	160	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	9	C	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	9	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	10	C	160	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1 2
118	63	10	D	160	1.0	0.6	0.0	0.0	3.5	0.0	0.0	0.0	1 2
118	63	2	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
118	63	1	B	160	3.0	37.2	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	1	A	160	3.0	12.8	0.0	0.0	0.0	0.0	1.0	0.4	1 2
118	63	2	C	160	1.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	5 2
118	63	2	D	160	2.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	5 2
118	63	1	C	160	4.0	37.8	0.0	0.0	0.0	0.0	1.0	0.2	5 2
118	63	1	D	160	2.0	2.4	0.0	0.0	0.0	0.0	1.0	0.2	1 2
118	63	11	B	160	2.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	11	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	12	B	160	3.0	1.1	1.0	0.0	0.0	0.0	0.0	0.0	5 2
118	63	12	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
118	63	11	C	160	3.0	1.3	0.0	0.0	0.0	0.0	1.0	0.2	1 2
118	63	11	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
118	63	12	C	160	2.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	63	12	D	160	1.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	6	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	6	A	160	3.0	21.1	0.0	0.0	0.0	0.0	1.0	0.3	5 2
118	62	6	C	160	3.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	5	D	160	2.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	7	B	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	8	A	160	4.0	1.6	0.0	0.0	0.0	0.0	1.0	0.3	1 2
118	62	8	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	8	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	3	B	160	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	3	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	3	C	160	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	1 2
118	62	3	D	160	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	1 2
118	62	9	B	160	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	1 2
118	62	10	C	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	10	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	1	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	1	A	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	62	1	D	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
118	61	6	B	160	1.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1 2
118	61	7	B	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
118	61	7	A	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5 2
118	61	7	D	160	1.0	0.2	0.0	0.0	0.0	0.0	1.0	0.4	5 2
118	65	24	B	40	10.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	65	24	A	80	6.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	6 3
118	65	24	C	80	3.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	65	24	D	80	2.0	0.6	0.0	0.0	0.0	1.8	0.0	0.0	1 3
118	64	18	A	160	2.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	17	B	160	11.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	19	C	120	0.0	0.0	0.0	0.0	0.0	11.0	0.0	0.0	1 3
118	64	19	D	160	5.0	3.5	0.0	0.0	0.0	1.6	0.0	0.0	1 3
118	64	20	C	160	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1 3
118	64	20	D	160	17.0	2.2	0.0	0.0	0.0	0.0	1.0	0.5	1 3
118	64	16	A	160	4.0	0.5	0.0	0.0	0.0	2.9	0.0	0.0	1 3
118	64	15	A	160	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	16	C	160	0.0	0.0	0.0	0.0	0.0	15.7	0.0	0.0	1 3
118	64	16	D	160	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0	1 3
118	64	15	C	160	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1 3
118	64	15	D	160	1.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	21	B	160	2.0	0.2	0.0	0.0	0.0	1.9	0.0	0.0	1 3
118	64	21	A	160	0.0	0.0	0.0	0.0	0.0	9.6	0.0	0.0	1 3
118	64	22	B	160	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	1 3
118	64	22	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 3
118	64	21	C	160	1.0	0.1	0.0	0.0	0.0	2.7	0.0	0.0	1 3
118	64	21	D	160	3.0	0.5	0.0	0.0	0.0	10.4	0.0	0.0	1 3
118	64	14	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5 3
118	64	13	A	160	14.0	2.7	0.0	0.0	3.0	0.0	1.0	0.2	1 3
118	64	14	C	160	3.0	1.4	0.0	0.0	0.0	0.0	1.0	0.1	1 3
118	64	14	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	13	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	13	D	160	1.0	0.2	0.0	0.0	5.4	0.0	1.0	0.2	6 3
118	64	23	B	160	5.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	5 3
118	64	23	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 3
118	64	24	B	160	[illegible]	[illegible]	0.0	0.0	0.0	0.0	0.0	0.0	1 3

118	64	24	A	160	11.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6	3
118	64	23	C	160	11.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5	3
118	64	23	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	24	D	160	16.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	63	18	B	160	0.0	0.0	0.9	10.6	0.0	0.0	0.0	0.0	1	3
118	63	18	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	63	17	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	18	C	160	0.0	0.0	0.1	0.8	0.0	0.0	0.0	0.0	1	3
118	63	17	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
118	63	17	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	19	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	63	19	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	63	20	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	63	20	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	19	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
118	63	20	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	16	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	16	A	160	5.0	0.3	0.0	0.0	0.0	0.0	1.0	0.2	5	2
118	63	15	B	160	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	63	16	C	160	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	16	D	120	10.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	63	15	D	160	2.0	0.3	0.0	0.0	0.0	0.0	1.0	0.3	1	2
118	63	21	B	160	6.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	21	A	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	22	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	22	A	160	10.0	0.6	0.0	0.0	0.0	0.0	1.0	0.3	5	2
118	63	21	C	160	1.0	0.3	0.0	0.0	0.0	0.0	1.0	0.3	5	2
118	63	21	D	160	1.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	22	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	63	22	D	160	7.0	0.8	0.0	0.0	0.0	0.0	2.0	0.4	5	2
118	63	14	B	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	14	A	160	2.0	3.2	0.0	0.0	0.0	0.0	1.0	0.2	1	2
118	63	13	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	14	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	13	C	160	5.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	63	24	B	80	6.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	63	23	D	160	3.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	17	B	160	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	17	A	160	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	18	C	160	5.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	19	B	160	2.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	15	A	160	2.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	20	B	160	1.0	0.3	0.0	0.0	2.7	0.0	0.0	0.0	1	2
118	62	16	B	40	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	6	2
118	62	15	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	16	C	80	0.0	0.0	0.0	0.0	0.0	1.3	1.0	0.2	1	2
118	62	15	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	21	B	160	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	1	2
118	62	21	A	160	3.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	21	C	160	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1	2
118	62	21	D	160	10.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	13	B	80	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	13	A	160	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	13	C	160	1.0	1.8	0.0	0.0	0.5	0.0	0.0	0.0	5	2
118	62	13	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	24	B	160	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	24	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	23	D	80	2.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	24	C	160	5.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	24	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	18	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	18	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	61	18	C	160	2.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	18	D	160	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	17	C	160	1.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	17	D	160	2.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	19	B	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1	5	2
118	61	19	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	20	B	160	3.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	20	A	160	5.0	5.1	0.0	0.0	0.6	0.0	0.0	0.0	1	2
118	61	19	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	20	C	160	3.0	5.9	0.0	0.0	0.0	0.0	-0.0	0.0	1	2
118	61	20	D	160	1.0	1.3	0.0	0.0	3.2	0.0	0.0	0.0	1	2
118	61	16	B	80	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1	2
118	61	16	A	160	7.0	3.5	0.0	0.0	2.1	0.0	0.0	0.0	1	2
118	61	16	C	160	6.0	0.8	0.0	0.0	2.6	0.0	0.0	0.0	1	2
118	65	29	D	160	6.0	0.6	0.0	0.0	0.0	4.0	0.0	0.0	7	3
118	65	26	A	80	24.0	3.4	0.0	0.0	0.0	5.3	0.0	0.0	6	3
118	65	25	B	120	3.0	1.6	0.0	0.0	0.0	15.0	0.0	0.0	6	3
118	64	30	B	160	4.0	2.2	0.0	0.0	2.6	2.2	0.0	0.0	1	3
118	64	30	A	80	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	29	B	160	2.0	33.6	0.0	0.0	0.0	0.0	1.0	0.2	1	3
118	64	29	A	160	5.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	30	D	40	1.0	13.4	0.0	0.0	0.0	0.0	1.0	0.3	6	3
118	64	29	C	160	6.0	6.4	0.0	0.0	0.9	0.0	0.0	0.0	6	3
118	64	29	D	160	38.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	6	3
118	64	31	A	80	6.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	32	B	160	6.0	7.5	0.0	0.0	0.0	0.0	2.0	0.5	1	3
118	64	32	A	160	5.0	5.3	0.0	0.0	2.6	0.0	1.0	0.3	1	3
118	64	31	D	80	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	[illegible]	C	160	13.0	5.4	0.0	0.0	0.0	0.0	1.0	0.1	1	3
118	64	[illegible]	D	160	5.0	5.4	0.0	0.0	0.0	0.0	2.0	0.5	1	3
118	64	28	B	160	11.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	28	A	160	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0	1	3
118	64	27	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	28	C	160	11.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	6	3
118	64	28	D	160	2.0	1.0	0.0	0.0	0.0	10.6	0.0	0.0	1	3
118	64	27	C	160	6.0	4.3	0.0	0.0	0.0	3.5	0.0	0.0	1	3
118	64	27	D	160	4.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	31	B	160	2.0	0.6	0.0	0.0	1.8	0.0	1.0	0.3	5	3
118	64	33	A	160	0.0	0.0	0.0	0.0	0.4	11.7	0.0	0.0	1	3
118	64	34	B	160	4.0	1.0	0.0	0.0	0.0	0.4	0.0	0.0	1	3
118	64	34	A	160	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	34	C	160	2.0	0.4	0.0	0.0	0.0	9.3	0.0	0.0	1	3
118	64	34	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	26	B	160	2.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	5	3
118	64	26	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	25	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	25	A	160	1.0	0.3	0.0	0.0	0.0	5.9	0.0	0.0	7	3
118	64	26	C	160	2.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	26	D	160	1.0	0.4	0.0	0.0	0.0	0.0	1.0	0.1	5	3
118	64	25	C	160	7.0	0.6	0.0	0.0	0.0	2.9	0.0	0.0	1	3
118	64	25	D	160	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0	1	2
118	64	35	B	120	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5	3
118	64	36	B	160	8.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	6	3
118	64	36	A	80	2.0	2.4	0.0	0.0	0.0	3.2	0.0	0.0	6	2
118	64	35	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	3
118	64	35	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
118	64	36	C	160	2.0	5.8	0.0	0.0	0.0	4.2	0.4	0.4	6	3
118	64	36	D	80	0.0	0.0	0.0	0.0	0.0	6.2	0.5	0.5	6	2
118	63	29	A	160	2.0	2.4	0.0	0.0	2.1	2.7	0.0	0.0	1	2
118	63	30	C	160	0.0	0.0	0.0	0.0	1.9	0.0	1.0	0.3	1	2
118	63	30	D	160	1.0	0.6	0.0	0.0	2.9	0.0	0.0	0.0	1	2
118	63	30	C	80	1.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	31	B	160	3.0	15.0	0.0	0.0	0.0	0.0	1.0	0.3	1	2
118	63	31	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	32	A	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	63	31	C	160	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	32	C	160	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1	2
118	63	28	B	160	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	28	A	160	3.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	33	B	160	8.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	63	33	D	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	30	A	80	1.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	29	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
118	62	30	C	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.2	5	2
118	62	30	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	29	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	29	D	160	0.0	0.0	0.0	0.0	0.0	6.9	1.0	0.3	1	2
118	62	31	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	31	A	160	4.0	20.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	31	D	160	11.0	10.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	32	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	32	D	160	0.0	0.0	0.0	0.0	0.0	5.9	1.0	0.2	1	2
118	62	28	A	40	3.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	27	A	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	28	C	160	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	1	2
118	62	27	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	33	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	33	D	160	4.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0		2
118	62	25	B	160	6.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	25	A	160	8.0	2.9	0.0	0.0	0.0	0.0	1.0	0.2	1	2
118	62	26	C	80	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	25	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	25	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	62	35	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	62	35	D	80	38.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	61	30	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	29	B	160	3.0	1.3	0.0	0.0	0.0	6.7	1.0	0.2	1	2
118	61	29	A	160	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	1	2
118	61	30	C	160	2.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	31	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	61	31	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	32	A	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	31	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
118	61	28	C	80	4.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	2
118	61	33	B	80	2.0	4.8	0.0	0.0	0.0	0.0	1.0	0.3	5	2
117	65	2	A	160	5.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	7	3
117	64	5	A	160	12.0	10.2	0.0	0.0	0.0	0.0	0.0	0.0	5	3
117	64	5	D	80	7.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0	5	3
117	64	7	B	160	19.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	64	7	C	160	16.0	1.3	0.0	0.0	0.0	0.0	1.0	0.3	1	3
117	64	4	B	160	5.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	4	A	160	7.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	64	3	B	160	1.0	0.3	0.0	0.0	0.0	8.6	0.0	0.0	1	3
117	64	3	A	160	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	4	C	80	2.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	64	4	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	3	C	160	3.0	1.3	0.0	0.0	0.0	3.7	0.0	0.0	1	3
117	64	3	D	160	3.0	0.3	0.0	0.0	0.0	0.6	0.0	0.0	1	3
117	64	9	A	120	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	10	B	160	6.0	7.8	0.0	0.0	0.0	1.4	0.0	0.0	6	3
117	64	10	A	160	1.0	0.2	0.0	0.0	0.0	3.8	0.0	0.0	1	3
117	64	9	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	10	C	160	2.0	2.6	0.0	0.0	0.0	3.0	0.0	0.0	1	3
117	64	10	D	160	4.0	8.6	0.0	0.0	0.0	8.6	1.0	0.3	1	3
117	64	2	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	2	A	160	3.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	5	3
117	64	1	B	160	10.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	64	1	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	64	2	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	2	D	160	6.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	5	3
117	64	1	C	160	4.0	2.4	0.0	0.1	0.0	0.0	0.0	0.0	6	3
117	64	1	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	64	11	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	11	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	12	B	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	11	D	160	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	6	3
117	64	12	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	64	12	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2

117	63	6	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	6	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	5	B	80	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	6	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	6	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	7	B	160	0.0	0.0	0.0	0.0	7.7	0.0	0.0	0.0	1	2
117	63	7	A	160	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	7	C	160	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	1	2
117	63	7	D	160	0.0	0.0	0.0	0.0	1.3	0.0	1.0	0.3	1	2
117	63	4	A	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	3	B	160	8.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	3	A	160	6.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	4	D	160	6.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	9	B	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	2
117	63	10	B	80	6.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	7	2
117	63	10	A	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	9	C	120	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	9	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	2	A	40	8.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	2	C	80	3.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	2	D	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	11	B	160	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	11	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	11	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	11	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	12	C	80	15.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	5	A	120	1.0	1.6	0.0	0.0	0.0	1.9	0.0	0.0	1	2
117	62	5	C	160	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	1	2
117	62	5	D	80	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	1	2
117	62	7	B	80	3.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	7	A	160	4.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	8	B	160	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	1	2
117	62	8	A	160	1.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	7	D	160	7.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	8	C	160	3.0	2.1	0.0	0.0	0.0	6.1	0.0	0.0	1	2
117	63	8	D	160	1.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	4	B	120	0.0	0.0	0.0	0.0	2.9	0.0	1.0	0.2	1	2
117	62	3	A	80	5.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	3	D	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	9	A	120	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	5	2
117	62	10	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	10	A	160	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	10	C	160	1.0	15.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	2	A	40	1.0	7.8	0.0	0.0	0.0	0.0	1.0	0.2	5	2
117	62	1	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	2	D	160	1.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	1	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	1	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	11	A	160	2.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	12	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	12	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	11	C	160	2.0	12.8	0.0	0.0	0.0	0.0	1.0	0.3	6	2
117	62	11	D	160	1.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	12	C	160	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1	2
117	62	12	D	160	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	1	2
117	61	6	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	5	B	160	2.0	0.3	0.0	0.0	0.0	17.1	0.0	0.0	1	2
117	61	6	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	6	D	160	1.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	5	C	160	4.0	1.0	0.0	0.0	0.0	5.4	1.0	0.2	6	2
117	61	7	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	7	A	160	3.0	0.3	0.0	0.0	0.0	5.9	1.0	0.3	1	2
117	61	7	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	7	D	160	2.0	1.0	0.0	0.0	0.0	4.8	0.0	0.0	1	2
117	61	8	C	120	1.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	64	15	B	160	10.0	7.5	0.0	0.0	0.2	0.0	0.0	0.0	6	3
117	64	15	A	160	1.0	0.3	0.0	0.0	3.8	0.0	1.0	0.2	1	3
117	64	16	D	160	0.0	0.0	0.0	0.0	4.5	0.0	1.0	0.3	6	3
117	64	15	C	160	6.0	7.0	0.0	0.0	2.6	0.0	0.0	0.0	1	3
117	64	15	D	160	2.0	3.7	0.0	0.0	2.7	0.0	0.0	0.0	1	3
117	64	21	A	80	2.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0	5	3
117	64	22	B	160	2.0	4.0	0.0	0.0	0.5	0.0	0.0	0.0	1	3
117	64	22	A	160	1.0	14.2	0.0	0.0	1.0	0.0	0.0	0.0	1	3
117	64	22	C	120	2.0	0.3	0.0	0.0	2.4	0.0	1.0	0.2	5	3
117	64	22	D	160	2.0	5.1	0.0	0.0	0.0	0.0	1.0	0.3	5	3
117	64	14	B	160	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	14	A	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.2	1	3
117	64	13	B	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	64	13	A	160	1.0	0.3	0.0	0.0	0.0	0.0	1.0	0.1	6	2
117	64	14	C	160	6.0	0.6	0.0	0.0	0.0	0.0	1.0	0.3	1	3
117	64	14	D	160	8.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	13	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	13	D	160	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.2	1	2
117	64	23	B	160	13.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0	7	3
117	64	23	A	160	6.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	7	3
117	64	24	B	160	2.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	64	24	A	160	1.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	64	24	C	80	8.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	24	D	160	5.0	2.7	0.0	0.0	0.0	0.0	7.0	0.4	6	2
117	63	17	B	160	2.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	17	A	160	6.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	17	C	160	3.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	20	B	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	20	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	20	C	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	63	20	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	15	D	160	2.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	21	B	160	6.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	21	A	160	5.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	22	B	160	5.0	23.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	22	A	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	21	C	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	21	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	22	C	160	2.0	21.6	0.0	0.0	0.0	0.0	1.0	0.2	6	2
117	63	22	D	160	8.0	15.5	0.0	0.0	0.0	0.0	1.0	0.1	1	2
117	63	14	B	160	13.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	14	A	160	1.0	7.4	0.0	0.0	0.0	0.0	1.0	0.3	5	2
117	63	13	B	160	3.0	0.3	0.0	0.0	0.0	0.0	1.0	0.4	6	2
117	63	13	A	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	63	13	C	160	5.0	9.4	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	63	13	D	80	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	23	B	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	23	A	160	10.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	23	D	160	4.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	24	D	160	4.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	18	A	160	11.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	17	B	160	0.0	0.0	0.0	0.0	0.0	8.6	1.0	0.3	1	2
117	62	17	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	18	D	160	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	1	2
117	62	17	C	160	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	1	2
117	62	17	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	19	B	120	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	19	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	20	B	160	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	6	2
117	62	20	A	160	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	1	2
117	62	19	C	80	1.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	19	D	160	1.0	0.8	0.0	0.0	0.0	0.0	1.0	0.3	1	2
117	62	20	C	160	0.0	0.0	0.0	0.0	1.8	8.8	0.0	0.0	1	2
117	62	20	D	160	0.0	0.0	0.0	0.0	2.4	4.0	1.0	0.3	6	2
117	62	15	B	160	1.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	15	A	160	1.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	16	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	15	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	15	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	21	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	21	A	160	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	22	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	22	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	21	C	160	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	1	2
117	62	21	D	160	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	1	2
117	62	22	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	22	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	14	B	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	14	A	160	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	13	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	13	A	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	14	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	14	D	160	2.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	13	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	13	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	23	B	160	4.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	23	A	160	1.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	24	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	62	24	A	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	23	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	23	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	24	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	62	24	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	61	18	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	18	A	160	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	1	2
117	61	17	B	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	17	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	18	C	160	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1	2
117	61	18	D	160	0.0	0.0	0.0	0.0	12.8	0.0	0.0	0.0	6	2
117	61	17	C	160	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	1	2
117	61	19	B	160	0.0	0.0	0.0	0.0	0.0	8.6	0.0	0.0	1	2
117	61	19	A	160	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	1	2
117	61	20	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	19	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	19	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	61	20	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	64	26	B	160	7.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	26	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	25	B	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	64	25	A	160	1.0	1.4	0.0	0.0	0.0	0.0	1.0	0.2	1	3
117	64	26	C	160	0.0	0.0	0.0	0.0	4.3	0.0	1.0	0.3	6	3
117	64	26	D	160	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	1	3
117	64	25	C	150	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	1	3
117	64	25	D	160	1.0	0.6	0.0	0.0	0.0	0.0	1.0	0.2	1	2
117	64	35	B	160	5.0	1.0	0.0	0.0	0.5	0.0	0.0	0.0	1	3
117	64	35	A	160	1.0	0.2	0.0	0.0	2.4	4.6	0.0	0.0	1	3
117	64	36	B	160	2.0	8.5	0.0	0.0	0.0	1.0	0.0	0.0	6	3
117	64	36	A	160	1.0	13.9	0.0	0.0	0.0	0.0	1.0	0.3	6	3
117	64	35	D	160	6.0	5.1	0.0	0.0	0.0	7.8	0.0	0.0	1	3
117	64	36	C	160	2.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	64	36	D	160	2.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	29	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	29	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	30	C	160	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	30	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4	2
117	63	29	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	31	B	160	12.0	0.8	0.0	0.7	0.6	0.0	0.0	0.0	1	3
117	63	31	A	160	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	6	3
117	63	32	B	80	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	32	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	31	C	160	13.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	31	D	160	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	1	3
117	63	28	B	160	1.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	28	A	160	2.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	27	B	160	7.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2

117	63	27	A	160	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	28	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4	3
117	63	28	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	27	C	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	27	D	160	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	33	B	160	4.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	33	A	160	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	34	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	34	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	33	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	33	D	160	2.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	34	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	63	34	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	63	26	B	160	4.0	22.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	26	A	160	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	1	2
117	63	25	B	160	12.0	3.0	0.0	0.0	1.3	0.0	0.0	0.0	5	2
117	63	26	C	160	7.0	13.9	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	63	26	D	160	6.0	7.4	0.0	0.0	1.1	0.0	0.0	0.0	1	2
117	63	25	C	80	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	6	2
117	63	35	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	63	35	A	160	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1	2
117	63	36	B	40	3.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	6	2
117	63	35	C	140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
117	63	35	D	130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	36	C	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
117	63	36	D	60	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	30	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	30	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	29	B	160	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	6	2
117	62	29	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	30	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	30	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	29	C	160	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	6	2
117	62	29	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	31	B	80	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	6	2
117	62	31	A	160	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	6	2
117	62	32	B	160	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1	2
117	62	32	A	160	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	31	D	160	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	1	2
117	62	32	D	160	3.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	28	B	160	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	28	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	27	B	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	27	A	160	4.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	28	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	28	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	27	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	27	D	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	33	B	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	33	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	34	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	34	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	33	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	33	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	34	C	160	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	26	B	160	2.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	26	A	160	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	25	B	160	2.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	25	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	26	C	160	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	26	D	160	2.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	25	C	120	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	25	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5	2
117	62	35	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	35	A	160	4.0	3.0	0.0	0.0	0.0	0.0	1.0	0.3	1	2
117	62	36	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	35	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	35	D	160	2.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	30	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
117	62	30	A	160	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	1	2
116	64	10	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	3
116	64	2	B	160	0.0	0.0	0.0	0.0	0.0	14.7	0.0	0.0	1	3
116	64	2	A	160	3.0	2.1	0.0	0.0	0.0	4.3	0.0	0.0	1	3
116	64	1	B	160	5.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	1	A	160	6.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	2	D	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	64	1	C	160	2.0	0.3	0.0	0.0	0.0	0.0	1.0	0.3	1	3
116	64	1	D	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.2	1	3
116	64	12	B	160	8.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	11	C	160	7.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	12	D	160	4.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	4	B	160	9.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	4	C	160	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	4	D	160	1.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	7	B	160	6.0	1.9	0.0	0.0	0.0	0.0	1.0	0.1	6	3
116	63	7	A	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1	6	3
116	63	8	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	7	C	160	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.4	6	3
116	63	7	D	160	1.0	3.5	0.0	0.0	0.0	0.0	1.0	0.1	6	3
116	63	8	C	160	0.0	0.0	1.0	8.1	0.0	0.0	0.0	0.0	1	3
116	63	8	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	4	A	160	9.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	3	B	160	2.0	0.8	0.0	0.0	0.0	0.0	1.0	0.1	1	3
116	63	3	A	160	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	4	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	3	C	170	4.0	0.6	0.0	0.0	0.0	0.0	1.0	0.1	1	3
116	63	2	A	160	2.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	63	1	B	160	3.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	1	A	170	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
116	63	2	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	1	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	3
116	63	1	D	80	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	11	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	12	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	12	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	11	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	12	C	160	19.0	3.4	0.0	0.0	0.0	0.0	1.0	0.3	6	3
116	63	12	D	160	9.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	5	B	160	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	5	A	160	4.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	5	C	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	5	D	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	7	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	7	A	160	1.0	10.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	8	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	7	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	62	7	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	62	8	C	160	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	6	2
116	62	8	D	160	2.0	0.5	0.0	0.0	-0.0	0.0	1.0	0.2	6	2
116	62	3	B	160	4.0	1.1	0.0	0.0	1.6	0.0	0.0	0.0	1	2
116	62	3	A	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	3	C	160	1.0	0.6	0.0	0.0	1.7	0.0	0.0	0.0	1	2
116	62	3	D	150	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	9	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	10	B	160	1.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	10	A	160	1.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	9	C	160	1.0	0.6	0.0	0.0	0.6	0.0	0.0	0.0	6	2
116	62	9	D	160	1.0	5.0	0.0	0.0	0.6	0.0	0.0	0.0	1	2
116	62	10	C	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	10	D	160	3.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	2	B	160	3.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	2	C	160	2.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	11	B	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	11	A	160	2.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	64	14	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	13	B	80	7.0	1.4	0.0	0.0	0.0	0.0	1.0	0.2	6	3
116	64	13	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	24	B	80	1.0	0.8	0.0	0.0	0.0	0.0	1.0	0.2	1	3
116	64	24	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	23	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	64	24	C	160	2.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	64	24	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	18	B	80	1.0	2.6	0.0	0.0	0.0	0.0	1.0	0.4	6	3
116	63	18	A	160	6.0	10.6	0.0	0.0	0.0	0.0	2.0	0.4	6	3
116	63	17	B	160	4.0	1.8	0.0	0.0	0.0	0.0	1.0	0.3	1	3
116	63	17	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	18	C	160	1.0	0.8	0.0	0.0	0.0	0.0	1.0	0.1	6	3
116	63	18	D	160	6.0	1.3	0.0	0.0	0.0	0.0	2.0	0.5	6	3
116	63	17	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	17	D	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.2	1	3
116	63	19	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	19	A	160	7.0	7.5	0.0	0.0	0.0	0.0	1.0	0.2	6	3
116	63	19	D	160	4.0	1.3	0.0	0.0	0.0	0.0	1.0	0.2	6	3
116	63	9	B	40	1.0	42.9	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	63	9	A	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	10	B	160	9.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	9	C	80	1.0	30.7	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	63	9	D	60	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	63	16	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	16	D	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	3
116	63	15	C	80	6.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	14	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	13	B	160	4.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	14	D	40	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	13	C	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	23	A	160	4.0	0.8	0.0	0.0	0.0	0.0	1.0	0.3	1	3
116	63	24	B	160	3.0	1.0	0.0	0.0	0.0	0.0	1.0	0.2	1	3
116	63	24	A	160	2.0	4.6	0.0	0.0	0.0	0.0	1.0	0.2	1	3
116	63	23	D	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	18	B	160	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	18	A	160	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1	3
116	62	17	B	160	0.0	0.0	0.6	1.4	1.6	0.0	0.0	0.0	6	3
116	62	17	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	18	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	18	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	17	C	160	1.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	6	2
116	62	17	D	160	3.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	20	B	120	1.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	6	2
116	62	20	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	19	C	160	4.0	9.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	19	D	160	3.0	3.2	0.0	0.0	0.0	0.0	1.0	0.2	1	3
116	62	20	C	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	20	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
116	62	16	B	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
116	62	16	A	160	2.0	2.4	0.0	0.0	3.2	0.0	1.0	0.3	6	2
116	62	15	B	160	1.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	16	C	80	2.0	3.4	0.0	0.0	1.1	0.0	0.0	0.0	1	2
116	62	14	D	160	6.0	27.8	0.0	0.0	0.0	0.0	1.0	0.2	6	2
116	62	15	C	160	1.0	1.1	0.0	0.0	0.0	0.0	1.0	0.3	6	2
116	62	15	D	160	1.	0.6	0.0	0.0	1.1	0.0	0.0	0.0	6	2
116	62	21	B	160	3.0	6.2	0.0	0.0	0.0	0.0	1.0	0.2	1	2
116	62	21	A	160	1.0	3.5	0.0	0.0	2.9	0.0	0.0	0.0	6	2
116	62	22	B	160	2.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	6	2
116	62	21	C	160	1.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	21	D	160	2.0	0.8	0.3	0.0	1.4	0.0	0.0	0.0	1	2
116	62	22	C	160	3.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	22	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	14	B	160	1.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	14	C	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	14	D	80	0.0	0.0	0.0	0.0	2.4	0.0	1.0	0.1	6	2

116	62	23	B	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	2
116	62	23	A	40	0.0	0.0	0.0	0.0	1.1	1.7	0.0	0.0	6	2
116	61	17	A	160	8.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	7	2
116	61	17	C	160	5.0	4.5	0.0	0.0	0.0	0.0	1.0	0.2	7	2
116	61	17	D	160	7.0	3.5	0.0	0.0	0 0	0.0	0.0	0.0	7	2
116	64	26	B	80	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1	6	3
116	64	26	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	1	3
116	64	25	B	160	3.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	64	25	A	160	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0 0	6	3
116	64	26	D	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	64	25	C	120	2.0	1.4	0.0	0.0	0.0	0.0	0 0	0.0	6	3
116	64	25	D	160	3.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	36	A	160	5.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	64	36	D	160	2.0	4.3	0.0	0.0	0.0	0.0	1.0	0.3	1	3
116	63	30	B	160	1.0	0.5	0.1	1.6	0.0	0.0	0 0	0.0	6	3
116	63	30	A	160	1.0	0.3	0.1	8.3	0.0	0.0	0 0	0.0	6	3
116	63	29	A	80	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	30	C	160	1.0	0.3	0.2	33.4	0.0	0.0	0.0	0.0	1	3
116	63	30	D	160	0.0	0.0	0.1	7.4	0.0	0.0	1.0	0.3	1	3
116	63	29	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	31	B	160	0.0	0.0	0.2	42.2	0.0	0 0	0.0	0.0	1	3
116	63	32	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	32	A	160	2.0	1.0	0.0	0.0	0.0	0.0	1.0	0.2	6	3
116	63	31	C	160	0.0	0.0	0.2	19.4	0.0	0.0	0.0	0.0	6	3
116	63	31	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	32	C	80	0.0	0.0	0.2	22.7	0.0	0 0	1.0	0.2	1	3
116	63	21	B	160	4.0	2.2	0.0	0.0	0.0	0 0	0.0	0.0	1	3
116	63	22	D	160	3.0	7.8	0.0	0.0	0.0	0.0	1 0	0.1	1	3
116	63	28	B	160	3.0	3 8	0.0	0.0	0.0	0.0	2 0	0.4	1	3
116	63	28	A	160	2.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	27	B	160	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	27	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	28	C	160	3.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	28	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	27	C	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1	1	3
116	63	27	D	160	0.0	0.0	0 0	0.0	0 0	0.0	0 0	0.0	1	3
116	63	25	B	160	0.0	0.0	0.0	0.0	0.0	0 0	0 0	0.0	1	3
116	63	26	C	120	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	6	3
116	63	25	C	160	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	6	3
116	63	25	D	160	1.0	0.3	0.0	0 0	2.4	0.0	1.0	0.2	6	3
116	63	35	B	120	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1	3
116	63	36	B	160	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1	3
116	63	36	A	160	1.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	63	36	C	160	2.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	6	3
116	63	36	D	160	7.0	3.5	0.0	0.0	0.0	0.0	1.0	0.2	6	3
116	62	30	B	160	0.0	0.0	0.0	0 0	1.8	0 0	0.0	0.0	6	3
116	62	30	A	160	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0	1	3
116	62	29	B	120	0.0	0.0	0.0	0 0	0.0	0 0	0 0	0.0	1	3
116	62	29	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	6	3
116	62	30	C	160	0.0	0.0	0.0	0.0	1.3	0.0	1.0	0.3	1	3
116	62	30	D	160	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	6	3
116	62	29	C	160	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1	3
116	62	29	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	31	B	160	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	1	3
116	62	31	A	160	0.0	0.0	0.0	0.0	5.4	0 0	1 0	0.3	6	3
116	62	32	B	160	0.0	0.0	0 1	6.4	5.8	0.0	1.0	0.3	6	3
116	62	32	A	160	4.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
116	62	31	C	160	3.0	4.0	0.0	0.0	0.0	0.0	1.0	0.2	1	3
116	62	31	D	160	1.0	0.3	0.0	0.0	0 0	0.0	0.0	0.0	1	3
116	62	32	C	160	0.0	0.0	0.1	5.9	0.0	0.0	0.0	0.0	1	3
116	62	32	D	160	0.0	0.0	0.1	25.3	0.0	0.0	0.0	0.0	6	3
116	62	28	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	28	A	160	0.0	0.0	0.0	0.0	4.2	0 0	1.0	0.2	1	2
116	62	27	A	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	28	C	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	6	2
116	62	28	D	160	0.0	0.0	0.0	0.0	0.8	0 0	0.0	0.0	1	2
116	62	27	C	160	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	1	2
116	62	27	D	160	0.0	0.0	0.0	0.0	3.5	3 8	0 0	0.0	1	2
116	62	33	B	160	0.0	0 0	0.0	0.0	0.0	0.0	0 0	0.0	6	2
116	62	34	B	160	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	6	2
116	62	34	C	160	3.0	2.2	0.0	0.0	0.0	1.0	-0.0	0.0	1	2
116	62	26	C	80	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	1	2
116	62	35	B	160	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	1	2
116	62	35	C	160	1.0	9.9	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	35	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
116	62	36	C	160	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	1	2
115	64	1	A	50	1.0	5.8	0.0	0.0	0.0	0 0	0 0	0.0	1	3
115	63	5	B	160	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1	3
115	63	6	C	160	0.0	0.0	0.0	0.0	2.2	0.0	2.0	0 4	1	3
115	63	5	C	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	6	3
115	63	8	B	80	0 0	0.0	0.0	0.0	1.3	0.0	1.0	0.2	1	3
115	63	8	A	160	1.0	1.8	0.0	0.0	1.4	0.0	0.0	0.0	1	3
116	63	34	C	160	1.0	1.9	0.0	0.0	0.0	0.0	0 0	0.0	1	3
116	63	34	D	160	2.0	2.9	0.0	0.0	0.0	0.0	1.0	0.2	1	3
115	63	4	B	160	0 0	0 0	0 0	0 0	0.0	0.0	0.0	0.0	1	3
115	63	4	C	160	1.0	2.1	0.0	0.0	0.0	0.0	1.0	0.1	1	3
115	63	3	C	80	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	1	3
115	63	2	B	160	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0 1	1	3
115	63	2	A	160	0.0	0.0	0 0	0 0	0.0	0.0	0.0	0.0	1	3
115	63	1	A	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
115	63	12	B	160	2.0	1 4	0.0	0.0	0.0	0.0	0.0	0.0	6	3
115	63	12	A	160	0.0	0.0	0 0	0 0	0.0	0.0	0 0	0.0	1	3
115	63	11	C	160	3.0	0 1	0 0	0.0	0.0	0 0	0 0	0.0	1	3
115	63	11	D	80	0.0	0.0	0.0	0.0	0.0	0 0	0 0	0.0	1	3
115	63	12	C	40	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	1	3
115	62	6	B	160	1 0	12.2	0 0	0.0	0.0	0.0	1.0	0 1	1	3
115	62	6	A	160	1.0	0.6	0.0	0 0	0.0	0.0	0.0	0.0	1	3
115	62	5	B	160	0 0	0.0	0.1	0.0	2.4	0.0	0 0	0.0	1	3
115	62	5	A	160	0 0	0.0	0 1	10.7	1.9	0 0	0.0	0.0	6	3
115	62	6	D	120	1.0	0 8	0 0	0 0	0.0	0.0	0.0	0.0	1	3

115	62	5	C	160	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1	3
115	62	5	D	160	1.0	11.0	0.0	0.0	2.6	0.0	0.0	0.0	1	3
115	62	3	D	160	2.0	1.3	0.0	0.0	0 0	0.0	0.0	0.0	1	2
115	62	10	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
115	62	10	A	160	3.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	1	2
115	62	10	C	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
115	62	10	D	160	1.0	0.8	0.0	0.0	0.0	0.0	1.0	0.2	1	2
115	62	2	B	160	1.0	4.5	0 0	0.0	0 0	0.0	0.0	0.0	1	2
115	62	2	C	160	3 0	7.5	0.0	0.0	0.0	0.0	0 0	0.0	1	2
115	62	11	C	160	1.0	1.9	0 0	0.0	0.0	0 0	0.0	0.0	1	2
115	62	11	D	160	5.0	5.8	0.0	0.0	0.0	0 0	0.0	0.0	6	2
115	62	12	C	160	2.0	1.8	0.0	0.0	0.0	0.0	1.0	0.2	1	2
115	61	7	D	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	2
115	61	8	C	160	7.0	7.2	0 0	0.0	-0.0	0.0	0.0	0.0	7	2
115	63	9	B	160	0 0	0.0	0 0	0.0	0.0	0.0	0 0	0.0	1	3
115	63	10	B	160	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
115	63	10	C	160	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1	3
115	63	15	A	160	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1	3
115	63	16	C	80	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	1	3
115	63	16	D	160	6.0	0.8	0 0	0.0	0.0	6.1	1.0	0.3	1	3
115	63	15	C	160	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.5	1	3
115	63	15	D	160	2.0	0.3	0.0	0.0	0.0	0.0	1.0	0.1	1	3
115	63	14	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	1	3
115	63	13	B	160	0.0	0.0	0.0	0.0	0.0	0.0	1 0	0.2	1	3
115	63	14	C	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
115	63	14	D	160	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.3	6	3
115	63	13	C	80	1.0	5.8	0.0	0.0	0.0	1.1	0 0	0.0	6	3
115	63	23	B	80	1.0	5.8	0.0	0.0	0.0	1.6	0.0	0.0	6	3
115	62	18	D	80	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0	1	3
115	62	15	B	100	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	6	2
115	62	14	B	160	0.0	0.0	0.3	56 3	0.0	0.0	1.0	0.2	1	2
115	62	14	A	40	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
115	62	14	C	160	0.0	0.0	0.1	3.7	0.0	0.0	1.0	0.2	1	2
115	62	14	D	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	2
115	62	23	B	160	4.0	5.1	0.0	0.0	0.0	0.0	1.0	0.3	6	2
115	62	23	A	80	1.0	0.3	0.0	0.0	0.0	0.0	1.0	0.2	1	2
115	61	18	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	2
115	63	30	A	140	1.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	6	3
115	63	29	D	160	3.0	0 8	0 0	0.0	0.0	0.0	0.0	0.0	7	3
115	63	29	A	160	7.0	3.0	0.0	0.0	0.0	0.0	1.0	0.3	7	3
115	63	30	B	160	3 0	0 3	0.0	0.0	0 0	0.0	0.0	0.0	6	3
115	63	29	C	160	1.0	0.3	0.0	0.0	0 0	0.0	0.0	0.0	7	3
115	63	29	[illegible]	60	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	7	3
115	63	31	A	160	0.0	0 0	0 0	0.0	0.0	0.0	1.0	0.2	6	3
115	63	21	B	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	3
115	63	21	A	160	0.0	0.0	0 0	0 0	0.0	0.0	0.0	0 0	1	3
115	63	22	B	120	2.0	1.8	0.0	0.0	0.0	2.9	0.0	0.0	6	3
115	63	22	A	80	0.0	0.0	0.0	0.0	0.0	1 9	1.0	0.3	6	3
115	63	21	C	140	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	6	3
115	63	21	D	160	0 0	0.0	0.0	0.0	3 0	0.0	1.0	0.2	6	3
115	63	22	C	80	1.0	4.6	0.0	0.0	1.4	0.0	0.0	0.0	6	3
115	63	28	A	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
115	63	27	B	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3
115	62	33	A	150	4.0	1.3	0 0	0.0	0 0	0.0	0.0	0.0	7	3
115	62	34	B	70	0.0	0 0	0 0	0.0	0.0	0.0	0 0	0.0	1	3
115	62	33	D	150	8.0	15.2	0.0	0 0	0.0	0.0	1.0	0.3	7	3
115	62	34	C	160	2.0	2.2	0.0	0 0	0.0	0.0	0.0	0.0	7	3
115	62	34	D	30	0 0	0.0	0.0	0.0	0 0	0.0	0 0	0.0	1	3
114	62	4	A	160	4.0	10.7	0.0	0.0	0.0	0.0	1.0	0.2	7	3
114	62	3	B	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	3

APPENDIX B

28-20-B1a

United States Department of the Interior
FISH AND WILDLIFE SERVICE

AREA OFFICE SOUTH DAKOTA—NEBRASKA
POST OFFICE BOX 250
PIERRE, SOUTH DAKOTA 57501

IN REPLY REFER TO
ES/1950:112:01

March 31, 1976

Mr. Victor Meyers, Director
Remote Sensing Institute
SD State University
Brookings, SD 57006

Dear Mr. Meyers.

Based upon discussions between representatives of our respective agencies, we believe that very valuable information can be gleaned from the color infrared photography which your Institute has obtained through a grant from NASA.

Certain lands in Brown and Spink Counties, South Dakota, are scheduled for irrigation as a result of development of the Initial Stage, Oahe Unit, South Dakota. This land area includes a total of 190,000 acres. Natural prairie wetlands have been identified as a key habitat type to be adversely affected by development of the Oahe Unit. A key part of the U.S. Fish and Wildlife Service's reevaluation of the impacts of the Oahe Unit on fish and wildlife resources will be the determination of the quantitative effects of the project on these natural prairie wetlands.

To facilitate this reevaluation, a determination of the amount of wetland habitat in the lands to be irrigated is extremely important. Your Institute has the capability through the use of the current color infrared photography to make an extremely timely inventory of wetlands in the affected area.

In formulating this study to determine the impacts on wetlands from the Oahe Unit, some assumptions must be made. These assumptions are

1. That land within the Spink and West Brown irrigation district included in the Initial Stage, Oahe Unit, is scheduled to be irrigated at some future date.

2. That the Bureau of Reclamation plans call for installation of an adequate drainage system on and under all lands in the irrigation district to be irrigated.

3. That water supplies will be made available to the irrigable lands by a system of laterals.

4. That all wetlands will be drained and/or filled on all land upon which flood irrigation is employed (50 percent).

5. That all Type III, IV, and V wetlands will be drained and/or filled on all lands scheduled for sprinkler irrigation.

6. That Type I wetlands are incompatible with sprinkler irrigation because of the tendency of equipment to mire down and therefore are not conducive to maximum production on land valued in excess of $2000.00 per acre. Also, the surface and subsurface drainage system will be designed to eliminate excess water. Therefore, all Type I wetlands will be eliminated as irrigation is developed, either by filling or by surface or subsurface drainage systems. Consequently, a total wetland inventory on these lands is required.

Based upon discussions with Messrs. Moore and Best, this inventory can be accomplished by outlining the wetland areas on overlays using the color infrared photos and the acreage of these wetland areas determined mechanically. To give us this inventory in a format that would be most usable, we would like to suggest some procedures that would enhance the ease of biological interpretation of this wetland inventory. These procedures are:

1. Determine total acreage of all Type III, IV, and V natural wetland basins.*

2. Determine total acreage of all Type I natural wetland basins separate from the Type III, IV, and V category.

3. Determine the acreage of intermittent natural drainage ways. This summation should be kept separate from other categories of wetlands. Interpretation should include areas in natural drainage ways similar to Type I wetlands.

4. Determine the acreage of semipermanent and permanent streams. This summation should also be kept separate from other categories of wetlands.

5. Determine the acreage of artificial wetlands, ie. dugouts and stock dams. The number of each type multiplied by a representative average size would be satisfactory for this category.

6. Establish a cataloguing system for the contact prints and the overlays to facilitate retrieval of information on specific sites.

7. Establish a method to catalogue the wetland inventory on a legal description basis or at least on a legal township (6 mi x 6 mi) basis.

8. The inventory should be separated into 3 major categories including (1) the area in Brown County, (2) the area west of the James River in Spink County, and (3) the area east of the James River in Spink County.

*Classification in accordance with U.S. Fish and Wildlife Circular 39 "Wetlands of the United States".

We feel the timely information that can be obtained from this effort will be extremely useful in our reevaluation of the impacts due to the Oahe Unit. We appreciate the opportunity to work together on this matter and will continue to maintain close coordination. If you have any questions on this matter, please contact Wayne G. Brewster at this office, 605/224-8692.

Sincerely,

Rolf L. Wallenstrom

Rolf L. Wallenstrom
Area Manager

cc Regional Director, Denver, CO (ES)

28-20-B3-1

United States Department of the Interior
FISH AND WILDLIFE SERVICE

AREA OFFICE SOUTH DAKOTA—NEBRASKA
POST OFFICE BOX 250
PIERRE, SOUTH DAKOTA 57501

IN REPLY REFER TO
ENV/1950:112:01

July 29, 1976

JUL 1976
REC'D
Remote Sensing
Institute

Mr. Victor Meyers, Director
Remote Sensing Institute
SD State University
Brookings, SD 57006

Dear Mr. Meyers

Pursuant to discussions between representatives of our agencies last spring, it was determined that very valuable information could be gleaned from the color infrared photography which your Institute obtained through NASA grant NGL No. 42-003-007.

This photography covered an area in Brown and Spink Counties, South Dakota, called the Lake Dakota Plain. Approximately 190,000 acres of lands within these two counties are scheduled for irrigation through development of the Initial Stage of the Oahe Unit - a multipurpose water resource development project being constructed by the U.S. Bureau of Reclamation.

It is the responsibility of the U.S. Fish and Wildlife Service to determine the impacts of federally funded water development projects of this type on fish and wildlife resources. Natural prairie wetlands have been identified as a key wildlife habitat type to be adversely affected by Oahe Unit development. These wetlands are extremely important habitat for the national migratory bird resource; a resource for which we have primary responsibility.

The Fish and Wildlife Service is currently conducting a reevaluation of Oahe Unit impacts on fish and wildlife and as might be expected, assessment of this impact in such a large geographic area is extremely difficult. Therefore, methods that allow an accurate, reliable, and timely inventory of existing habitat are invaluable.

In March of this year, your Institute, in cooperation with the U.S. Fish and Wildlife Service, initiated a study using color infrared photography of the Lake Dakota Plain to determine wetland types and acreages through photo interpretation of color IR imagery. The data from this study would be used to ascertain the existing wetland base from which estimates of adverse effects of the Oahe Unit could be determined. This information would in turn be used to develop a wildlife habitat mitigation plan for the Oahe Unit.

28-20-B-3-2

We have received the first set of data from this study which includes an inventory of wetlands on approximately 310,000 acres. To develop an inventory on a land area of this magnitude in such a short time frame results in a tremendous saving of manpower that would have been required using traditional methods. In addition, the color infrared photography allows both a current inventory as well as a more accurate inventory because of more reliable photo interpretation, particularly with regard to the more temporary wetlands in a predominantly agricultural area.

This data will be extremely effective in our evaluation of the Oahe Unit. Furthermore, the speed at which you were able to make this methodology operational greatly accelerates our efforts.

We appreciate the opportunity to participate in this joint venture and will be eager to attempt other studies where the capabilities of your Institute can enhance our fish and wildlife conservation program.

Sincerely,

Rolf L. Wallenstrom

Rolf L. Wallenstrom
Area Manager

cc. Regional Director, Denver, CO (ENV)